

One Dollar a Year.

Single Copies, 10 Cents.



Vol. II.

Nos. 8-9.

PHONOGRAPH

A MONTHLY MAGAZINE

DEVOTED TO

THE SCIENCE OF SOUND . .

AND

.. RECORDING OF SPEECH.

PUBLISHED BY

THE NATIONAL PHONOGRAPH PUB. CO., L'D.
WORLD BUILDING, NEW YORK.

COPYRIGHTED, 1891, BY V. H. McRAE.

Entered at the New York Post Office as Second-class Matter.

681.843
P56

THE "EDISON RECORDS"

MANUFACTURED EXCLUSIVELY FOR THIS COMPANY AT

ORANGE, N. J.

The very highest class of
Talent and Skill are com-
bined in producing
records of

BANDS,

ORCHESTRAS,

CORNETS,

CLARIONETS,

PICCOLOS,

BANJOS,

PIANOS,

VOCALISTS.

New Selections and
varieties will be added
constantly. Send for our

APRIL 1st, 1892.

BULLETIN No. 1.

THE

North American Phonograph Co.

LIST OF

MUSICAL RECORDS

FOR THE

PHONOGRAPH.

NOTE.—These records we furnish only
to or through our authorized Agents.

ALL SELECTIONS SHOULD BE
ORDERED BY NUMBER.

Bradbury-Stone Storage Battery Company,

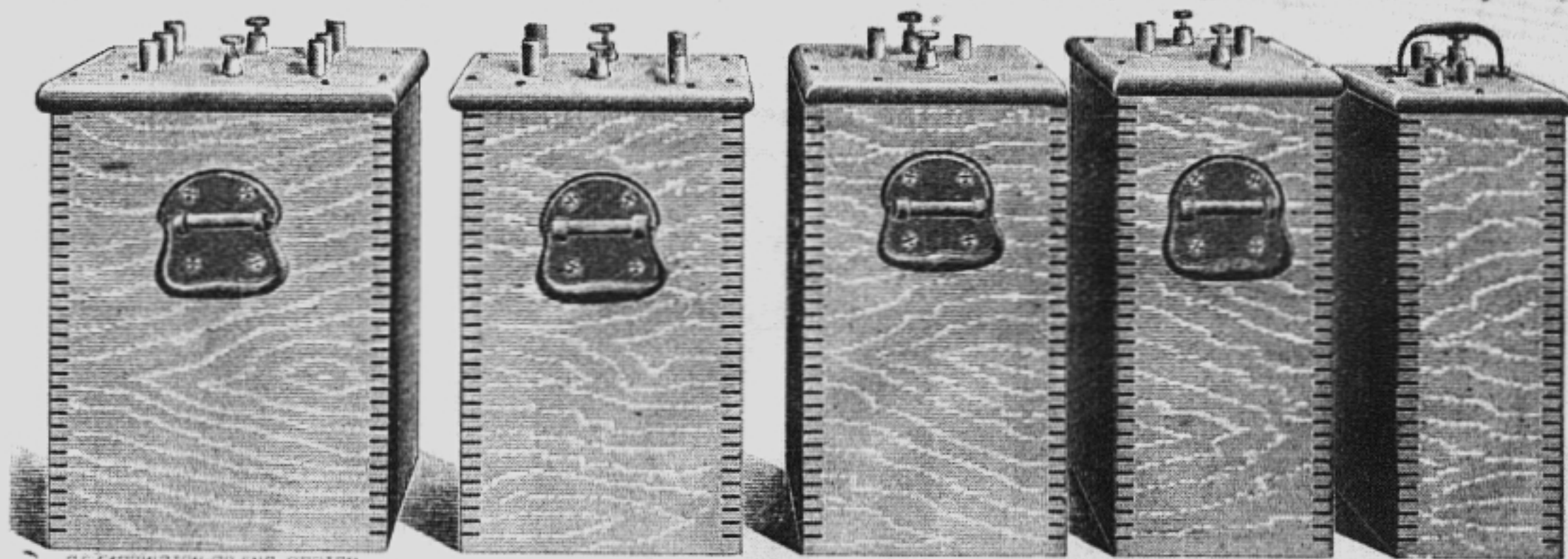
LOWELL, MASS.

The Ideal Storage Battery for Electric Lighting and Power,

Phonographs, Sewing Machines, Coffee Mills, Fan Motors,
Surgeons' and Physicians' Uses, Etc,

Cabinet Form.

In polished hardwood cases, fitted with handles and brass binding posts, fully charged and hermetically sealed.



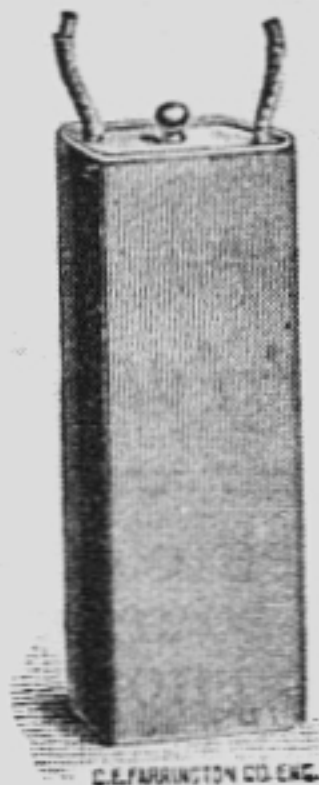
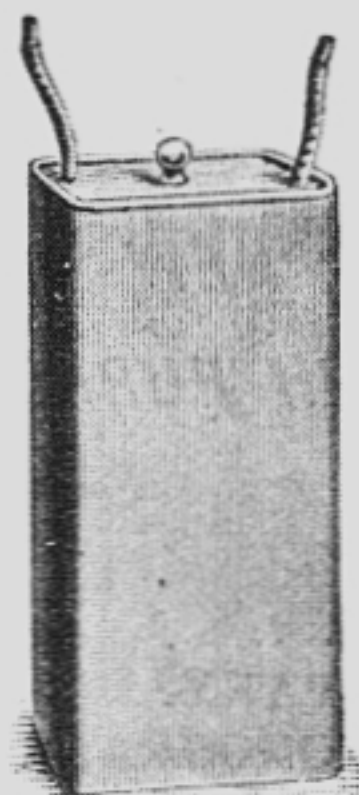
C.E. FARRINGTON CO. ENG. BOSTON

Voltage from 2 to 10.

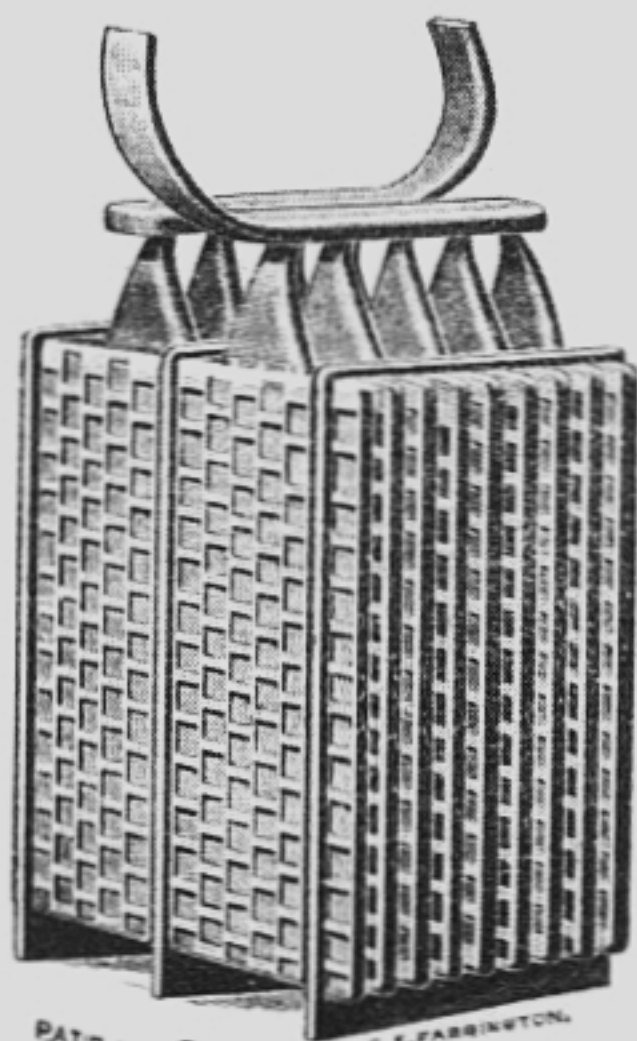
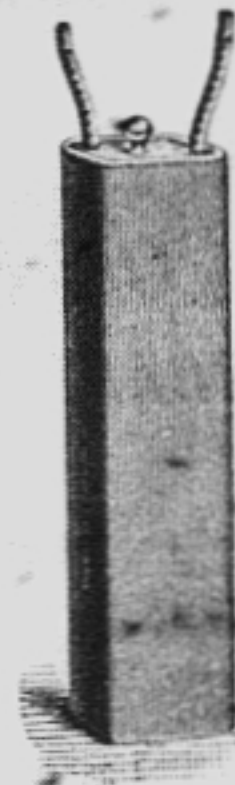
Handles on sides, or top of cases as desired.

Hard Rubber Cells.

Set up in the Best Quality Hard Rubber Jars, sealed and fully charged.



C.E. FARRINGTON CO. ENG.



PATD. DEC. 4 1890.

C.E. FARRINGTON

Any size and capacity.

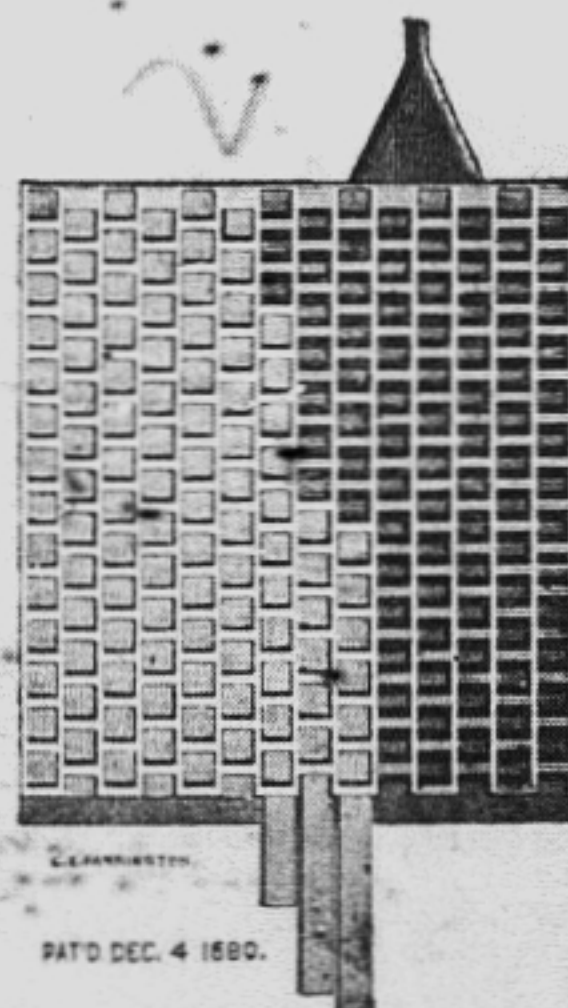
The lightest and most efficient battery ever placed on the market.

Its durability remains unquestioned.

In use by nearly all the leading Phonograph Companies in the country.

Correspond with them and get their opinions.

Send for circular.



C.E. FARRINGTON

PATD. DEC. 4 1890.

❖ **THE EASTERN** ❖

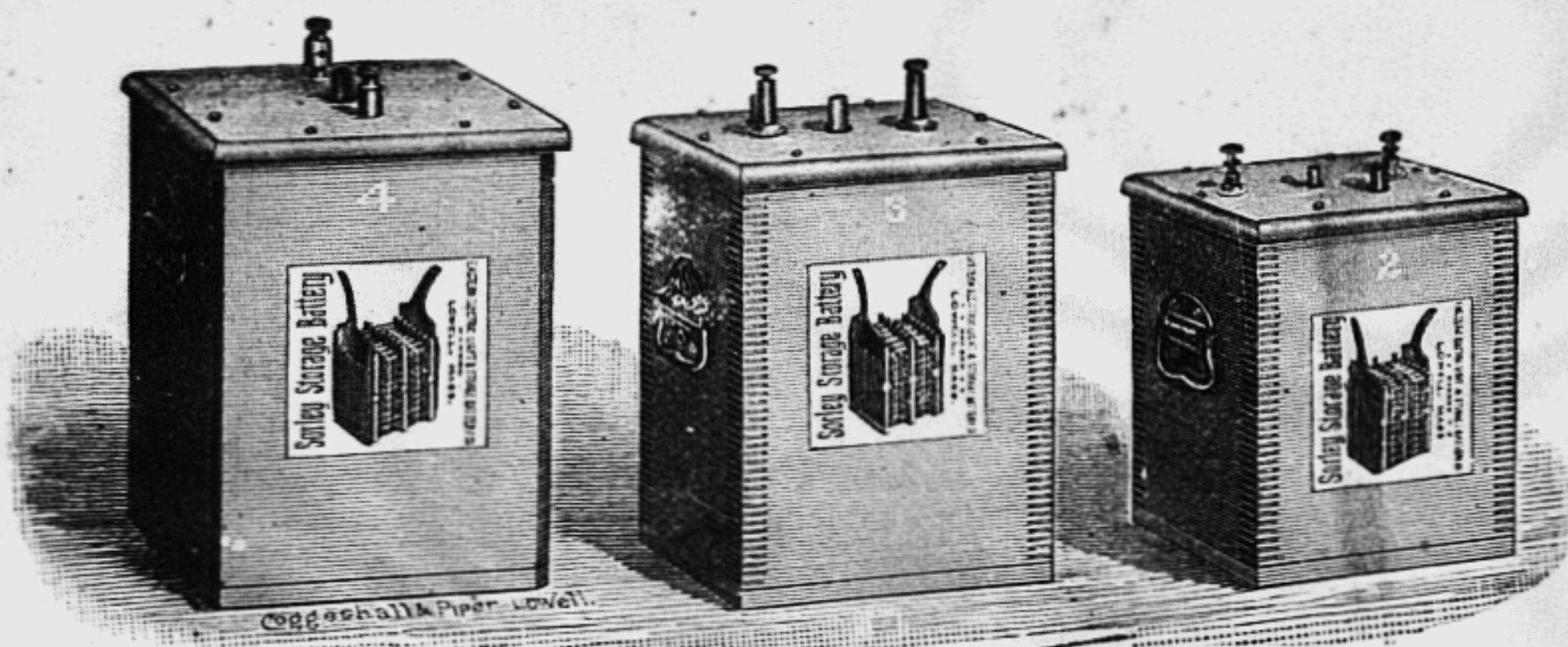
Electric Light and Storage Battery Company,

LOWELL, MASS.,

MANUFACTURERS OF THE

NEW "SPECIAL SORLEY" STORAGE BATTERY

With all the Latest Improvements,
in Polished Cabinet Cases.



**ADOPTED BY THE PHONOGRAPH CONVENTION, NEW YORK, AS THE
STANDARD BATTERY FOR PHONOGRAPH PURPOSES.**

IN USE BY
THE NEW ENGLAND PHONOGRAPH COMPANY.
STATE PHONOGRAPH COMPANY, ILLINOIS.
TEXAS PHONOGRAPH COMPANY.
SOUTH DAKOTA PHONOGRAPH COMPANY.
MONTANA PHONOGRAPH COMPANY.
HOLLAND BROS., OTTAWA, General Agents for Canada.

No. 4	Cell	will	run	a	Phonograph	from	120	to	150	Hours	on	a	Single	Charge.	Price	\$14.00
" 3	"	"	"	"	"	"	100	to	120	"	"	"	"	"	"	\$13.00
" 2	"	"	"	"	"	"	75	to	80	"	"	"	"	"	"	\$11.00

**Based on a discharge of Three Amperes, a Phonograph
in good order takes Two and One-Half Amperes.**

We guarantee our Phonograph Cell to have a greater capacity per pound of element, to have a greater capacity in proportion to its bulk, and to outlast any other storage battery in the market. Hundreds of our batteries are in use all over the country.

Dynamos for charging one or two cells in series of 15 amperes rate : price \$35.00, size $8\frac{1}{2}$ x $7\frac{1}{2}$ x 9 inches high, weight 40 lbs.

THE PHONOGRAM.

THE OFFICIAL ORGAN OF THE PHONOGRAPH COMPANIES OF THE UNITED STATES.

VOL. 2.

AUGUST-SEPTEMBER, 1892.

No. 8-9.

TABLE OF CONTENTS.

	PAGE.		PAGE.
A Typewriter Carriage Arrester.....	201	Methods of Conducting Business.....	178
A Noted Record Maker	194	Progress of Consolidation.....	179
Authors and Publishers.....	202	The Greatest Water Power on Earth.....	199
Convenient Attachments to the Phonograph	199	The Phonograph Supersedes the Pen.....	194
Demise of Mr. Charles E. Powers.....	171	The Phonograph in Musical Colleges.....	179
Electricity at Craig-y-nos Castle, Wales	202	The Musical Industry of the Phonograph.....	180
How to Make the Commercial Phonograph Success- ful.....	177	The Phonograph the Engine, the Typewriter the Tender.....	189
Instructions for Using the Edison Phonograph.	195	The Phonograph in Politics.....	190

NEW YORK PHONOGRAPH CO.,

257 Fifth Avenue, New York City.

Phonographs and Graphophones Rented for Business Purposes, for
Family Use, and for Exhibitions.

Please Note the Fact that

BANKERS,
BROKERS,
LAWYERS,
STENOGRAPHERS,
MERCHANTS,
PHYSICIANS,
TYPEWRITER OPERATORS,

and other professional and business men find these instruments indispensable, and enable them to get out their correspondence and other matter in one half of the time formerly required.

In the family circle and for public entertainment these machines are an endless source of pleasure. Music of all kinds is faithfully reproduced, and the voices of friends, professional singers and instrumental music of all kinds can be stored up and repeated on these instruments as often as desired.

Call and hear these instruments, or send for circulars, pamphlets, and terms.

THE STENOGRAPHER—The leading shorthand magazine. Francis H. Hemperley, author of "Analogical Syllabic Shorthand," Editor; Bates Torrey, author of "Practical Typewriting," Associate Editor. Specimen copy free. THE STENOGRAPHER PUBLISHING CO., 140 So. 4th St., Philadelphia, Pa.

"SHORTHAND" is a pamphlet of information, by the editor of *Browne's Phonographic Weekly*, that tells how to learn the art in the shortest time. Sent free by addressing D. L. SCOTT-BROWNE, 251 West Fourteenth Street, New York.

Gilmore's Band.

MANHANSETT QUARTETT.

Vocal Solos by . . .

SPENCER, JOHNSON, ASBURY, DIAMOND,
QUINN, SIMONDS, WILY WILLIAMS,
JOHN P. HOGAN, LIPP, GASKIN, CLARENCE,
BATT AND OTHERS.

Isslen's Orchestra, Gilmore's Band, Holding's Band,

Vosse's Band and Bayne's 69th Regiment Band.

BANJO SOLOS, CLARINET SOLOS, XYLOPHONE SOLOS,
PICCALO SOLOS, CORNET SOLOS.

SEND FOR OUR NEW CATALOGUE TO BE ISSUED OCTOBER 1st, 1892.

Notice:—We do not sell direct to individuals outside of our own territory. All orders for records made by us must be given through the various sub-companies. All records guaranteed.

NEW JERSEY PHONOGRAPH CO.,
NEWARK, N. J.

The "Brudder Rasmus Sermons"

As delivered by LOUIS VASNIER,

For the Louisiana Phonograph Company.

The following sermons are kept in stock and can usually be supplied at short notice.

"ADAM AND EVE." "JOB."
"END OB DE WORL'." "SINNERS."
"CHARITY OB DE HEART." "MOSES AND HIS TRIBE."
"WHY YOU ARE BLACK."

These sermons, while very humorous, are characteristic Negro delineations and are faithful reproductions of a dusky style of pulpit oratory that is rapidly passing away. The sermons are very popular amongst both whites and blacks and have proved to be among the most profitable of exhibition records.

All records are clear and distinct. Any imperfect records may be exchanged.

THE LOUSIANA PHONOGRAPH CO., L't'd.
182 Gravier Street, New Orleans, La.

INDISPENSABLE TO EVERY USER OF THE PHONOGRAPH.

A PRACTICAL GUIDE TO THE USE OF **THE EDISON PHONOGRAPH,**

By **JAMES L. ANDEM,**

President and General Manager of the
OHIO PHONOGRAPH COMPANY.

CONTENTS.

PREFACE.

General observations regarding the uses of the Phonograph.

THE PHONOGRAPH.

Different types of described—The treadle—The electrical motor—The water motor—The tin-foil machine—Special advantages of each.

THE CYLINDER.

Composition and dimensions of—How affected by heat and cold—Recording capacity—How often it can be re-used—Proper method of handling—Manner of loosening a tight cylinder—How to keep in adjustment—To remove particles of wax from surface—Preservation from injury—Packing for shipment—Precautions necessary—Cracked cylinders—Mailing—Worn-out records.

THE GOVERNOR.

Object and purpose of—How to regulate—Reproducing speed—How to determine correct speed—Standard speed—Cause of "wavering"—Remedy for—Slipping of belts—How to tighten them—The side brush—The top brush—Governor-post—Directions for keeping in good condition—Shunt-wire—Governor-springs—How to insure even running.

THE MOTOR.

Amperage of—Armature-coil—How to oil bearings—The commutator—Motor-brushes—Directions for cleaning—Cause of "humming" sound—Sparking—Proper adjustment of brushes—The shaft-pulley—Care of motor-belts—How to replace them—Tightening of belts—Free starting of motor—Idler pulleys.

THE DIAPHRAGM.

Different materials used for—Recorder and reproducer; how attached—Directions for reattaching to diaphragm—Rubber gaskets—How to replace broken diaphragm—Clamp-screws—Sending by mail—Spectacle-arm.

THE RECORDER.

Construction of—How sound-waves are recorded upon cylinder—The sapphire arm—Center-pin—Reproducer-weight—Special recorder for reporting purposes—How to renew the cutting edge—Chipping of sapphire point—Clogging of recorder—How to make "talking records"—Directions for taking musical records—Recording-horns—Number of machines used—Instructions for operators.

THE REPRODUCER.

Description of—Method of adjusting—Adjusting-screw—How records are reproduced—"Double adjustment"

—Care of reproducing-point—How to renew it—Hearing-tubes—Reproducing-horns—Metal tubes for exhibition purposes—Quality of tone—To throw sounds into a room—Size of tubing—Bulb and flange rubber tips.

THE PLANER.

Planing device described—Directions for setting knife—Adjustment of—How to pare off a cylinder—To disengage the knife—The wax-parings—Chip-trough—Readjustment of cutting edge—How to obtain a smooth cut—Turning of the knife—Chipping of sapphire—Replacing of.

THE MANDREL.

Main shaft and drum—Object of the taper—The feed-screw—Feed-arm and twin nuts—How to replace when worn—Steel centers; renewal of—How to obtain smooth running of mandrel—Oiling—Adjustment of feed-screw and feed-arm—Remedy for failure to carry forward.

MOTIVE POWER.

Direct electric current—Primary batteries—Description of—Storage batteries—Capacity of—How to ship them—How to determine when battery is exhausted—Directions for recharging—Cautions—Alternating current—Amperage—How to keep batteries in good condition.

THE DICTATOR.

The Phonograph as a business machine—Directions to the beginner—Method of dictating—How to "strike out" and change sentences—Requirements to obtain satisfactory record—Proper recording speed—The speaking tube—Dictating-horn—How to insure an accurate transcription.

THE TRANSCRIBER.

Instructions to typewriter-operator—Phonograph-table—Transcribing from the cylinder—Speed of reproduction—How to avoid mistakes—Changes and corrections—Rapidity of transcription—Stop-and-start-key—Care of the machine—Verification of transcript by operator.

AUTOMATIC PHONOGRAPHS.

By whom patronized—Pecuniary results—How to operate to make them successful—Care of cabinets—Cleanliness—Tubing—Ear-tips—Announcement cards—The necessary requirements on the part of an automatic attachment—Grouping of machines.

CONCLUSION.

How the Phonograph was discovered by Mr. Edison—Other uses to which it is adapted—The future of the Phonograph.

Bound in cloth, illuminated title, in gilt, 64 pages, with references to 33 separate parts of the Phonograph, illustrated by cut and figures. Price, \$1.00, postage paid. Address

THE OHIO PHONOGRAPH CO.,
220 Walnut Street,
CINCINNATI, - - - OHIO.

U. S. MARINE BAND.

"Peerless and Unrivaled on the American Continent."—P. S. Gilmore

You want the BEST RECORDS. Ours are known everywhere as THE HIGHEST GRADE RECORDS EVER MADE FOR THE PHONOGRAPH.

HARRISON AND CLEVELAND.

Between now and election we shall make a specialty of

CAMPAIGN SONGS,

BOTH REPUBLICAN AND DEMOCRATIC.

Send for extra list of campaign novelties.

They take on the Phonograph like wildfire.

We sell more records than all other dealers combined, because users of the phonograph long since discovered that our records are the

BEST IN THE WORLD.

We absolutely guarantee satisfaction as to selection and records. If you do not like what you get you may return it for exchange, provided you do so in good order immediately on receipt, and at your own expense.

Send for new Catalogue, embracing about two hundred Marine Band selections; also, Orchestra, Vocal and Piano, Vocal and Orchestra, Cornet and Piano, Clarinet and Piano, Humorous Recitations, Shakesperean Recitations, the Brady and Casey Series.

COLUMBIA PHONOGRAPH COMPANY,

627 E Street, Washington, D. C.



A MAGAZINE devoted to all interests connected with the recording of sound, the reproduction and preservation of speech, the Telephone, the Typewriter, and the progress of Electricity.

PUBLISHED MONTHLY.

TERMS:

ONE YEAR,	\$1.00
SINGLE NUMBERS,10

Postage Prepaid.

V. H. McRAE, Manager,
Pulitzer Building, Room 87. NEW YORK.

ADVERTISEMENTS.

THE PHONOGRAM, having special facilities in its circulation through the vast commercial system occupied by the Phonograph, Telephone, and other Electrical Devices, presents an exceptionally valuable advertising medium. The rates are reasonable and will be furnished on application.

CORRESPONDENCE

relating to the Phonograph, Typewriter, or Electricity, in any of their practical applications, is cordially invited, and the coöperation of all electrical thinkers and workers earnestly desired. Clear, concise, well-written articles are especially welcome; and communications, views, news items, local newspaper clippings, or any information likely to interest electricians, will be thankfully received and cheerfully acknowledged.

How to Make the Commercial Phonograph Eminently Successful.

When the typewriter was introduced to the business world there were no operators on hand to use it. To supply these the manufacturers resorted to the expedient of converting the women employed in their factories into typewritists. They were simply taught how to strike the keys, and were despatched to run the instrument wherever one was placed in an office. Many of these operatives were almost uneducated, and none of them could conduct the business of a commercial office, a law firm or a literary bureau.

For awhile these crude amanuenses were endured, but the public demand for intelligent, educated and skilled typewritists became so emphatic that young women graduating from the schools with good recommendations as to scholarship were induced to learn the art, and also acquire a practical knowledge of commercial forms, technical terms and foreign tongues. At present the standard of excellence in this art has reached a point at which no girl can compete, or even obtain a hearing, as an applicant for a good position unless she has a thorough knowledge of English grammar, is an adept in typewriting and is generally well informed.

We take the ground with the phonograph, which is a new industry, that experience in pioneer work with the typewriter teaches a lesson applicable to the former machine; and this is, that skilled operators command good salaries for themselves, and advance the interests of the phonograph. In a community where employers can readily secure the services of persons expert in the use of the phonograph and typewriter, there are sure to be more machines sold than where the reverse is the rule. Those women who can DISPENSE WITH INSPECTORS, by knowing how to take the machines apart and put them in good order will receive high salaries, for they save the time of their patrons. As a general rule, women are averse to giving close attention to the mechanism of the typewriter and phonograph because it requires a little patient observation practice. Do they ever stop to consider the length of time it requires to learn stenography? And as the phonograph is so much easier to become familiar with the operator can be coining money in the two years it would require for her to learn short-hand.

Methods of Conducting Business.

Divers means and numerous agencies are employed to conduct commercial enterprises and business in general. To achieve success in any, one great rule must be followed, which is to examine and note which among all of them is the prerequisite—the sine qua non, without whose aid and *exercise no business can prosper*.

If you run a canoe, you must keep your oars or push-pole in constant motion; if you run a steamer, the engines must be kept moving. These agencies are the impelling power and the prerequisite towards accomplishing the object you have in view, which is to bring your craft quickly into port. If you say to yourself: "Well, we won't hurry—a few days more or less can make no difference," you will discover at the end of one voyage that the expenses of the trip have run far ahead of the calculations made for them, and the result will be very serious loss to all concerned. If you will observe, you may soon perceive that *quick* and *large* sales or rentals are necessary. An intelligent business contemporary tells us that "to arrive at one's destination or to make a success in business, the shortest possible time occupied in accomplishing this end is what is desired."

But this cannot be attained unless people generally learn how to do it. We, therefore, reiterate the advice, *advertise in THE PHONOGRAM*, whose business it is to make known the capacities and merits of the instrument it represents. In order to disseminate the proper knowledge of the phonograph, this magazine must be strewn broadcast through every town and hamlet in the land. Such is the right method by which the cultivation of barren soil can be accomplished. On examination by our readers, it will be seen that there are sections of the country where the phonograph has been heard of but never seen, and other sections where the inhabitants have never even heard of it.

A word to our agents.

The phonograph companies should assist us to keep the columns of our magazine bright and interesting by encouraging attractive advertising and frequent change of copy, by artistic arrangement and by cultivating the acquaintance of the best class of purchasers; and right here another point for each company, by showing the thorough trustworthiness of the commodity advertised. In the course of training the public in the usefulness of this great labor-saving machine, every effort must be made to give the people

reason to have confidence in its capacities. If a very small proportion of the present investment in advertising, such as sending out circulars and testimonial letters, etc., from which there can be no returns, were spent each year in *THE PHONOGRAM* in convincing, urging, forcing (if necessary) the public to read and interest themselves in the progress this wonderful instrument is making, the net profits of both the advertiser and the publisher would be materially increased. Now what we want is your co-operation. Let us work together in educating the people as to the merits of the phonograph. Let us create a confidence in the public by showing the testimonials that come from the worthiest business houses in the country as to its practical value, and *let the companies see to it* that tens of thousands of copies be rightly distributed where they will sow the seed for quick harvests.

Only within a week we have passed through a dozen or more villages, not over a hundred miles from New York, coming in contact with some of their wealthiest and most wide-awake business men, and found that they had never seen a phonograph and knew nothing of its practical utility. The machine and the magazine were both to them a myth. It is to places like these we alluded when we stated above that *THE PHONOGRAM* should be strewn broadcast. And this is the second opening that occurs where agents may put in an oar to advantage.

Let us state the case again, so as to impress the situation on the minds of those who undertake to exploit the phonograph.

1st. There are large portions of the country containing towns, hamlets, etc., where the people have never heard of the phonograph.

2d. There are many parts of the country in which the people have heard of this machine, but have never seen it and know nothing of its qualities.

Now here is a plain statement and it ought to act on the minds of agents like a finger-post to the traveler, viz.: show him what direction to take in his business. Added to this we urge upon agents not to neglect the accessories of the phonograph. Advertise everything connected with it: batteries, typewriters, cylinders, attachments, records, any sort of lever or screw tending to make easier or better the use of the machine, because all these are advantages and should be loudly heralded and focused to the eye of the reader.

In the matter of political conventions and other assemblages the phonograph is far more economical than a stenographer.

The Progress of Consolidation.

Mr. T. R. Lombard, vice-president of the North American Phonograph Co., and Mr. A. O. Tate, of the Edison Phonograph Works, have returned from their trip West and Northwest, visiting every phonograph company located in that section. They report unqualified success in their mission. Mr. Lombard will probably shortly return to Chicago to personally supervise the inauguration of new methods for conducting business.

By the unification of phonograph interests the enterprise is receiving an impetus which is already beginning to be felt. There has never been a period in its history when prospects seemed brighter than at present.

The public has awakened to the fact that the phonograph is a great time and labor saver, and indispensable to a well-equipped office. We have a piece of mechanism, easily learned, easily controlled, and moderate in price. Sentiment is all in favor of the machine that talks, and when public sentiment turns in any one direction, like a mighty torrent, nothing can stem it. It has come our way. This is just what we want, and THE PHONOGRAM is proud to know it has in a humble way helped along the good cause.

Demise of Mr. Charles E. Powers.

The New England Phonograph Co. has sustained a great loss in the death of its treasurer, Mr. Charles E. Powers, whose demise occurred on the 11th of August, 1892. The following data with relation to this gentleman will be of interest to many of our readers:

Mr. Charles E. Powers, Treasurer of the New England Phonograph Co., expired of heart failure at his residence in Boston, Mass., on the 11th of August, 1892. Mr. Powers was graduated at Harvard College, and after terminating his law studies was admitted to the Massachusetts Bar. Serving for many years in the City Council of Boston and being a member of the Water Board of Boston, as well as an active worker in the field of politics, Mr. Powers did not carry out his intention of practicing law, but interested himself in other pursuits where advancement was more rapid. He became President of the Middlesex Railroad Co. and was considered an expert on all matters relating to railway interests. He was also connected with the New England Phonograph Co. from its inception, and for the last three years has been its treasurer.

Mr. Powers always maintained the respect and secured the good-will of those who knew him intimately, and his circle of acquaintances and friends in business and social circles in Boston was very large.

Rare Photographs, Copyrighted and Exclusive.

THE PHONOGRAM, which is nothing if not enterprising, holds in store a pleasant surprise for its readers, being able to announce that by a stroke of good fortune it has secured a limited number of the likenesses of Mr. Edison, taken at different periods of his life; his mother, his birthplace, his present home, library, laboratory and workshops, etc., which we now offer to the public.

We take occasion to state that these pictures cannot be purchased from the laboratory, nor from Mr. Edison himself; he being unwilling to allow them to go into general circulation.

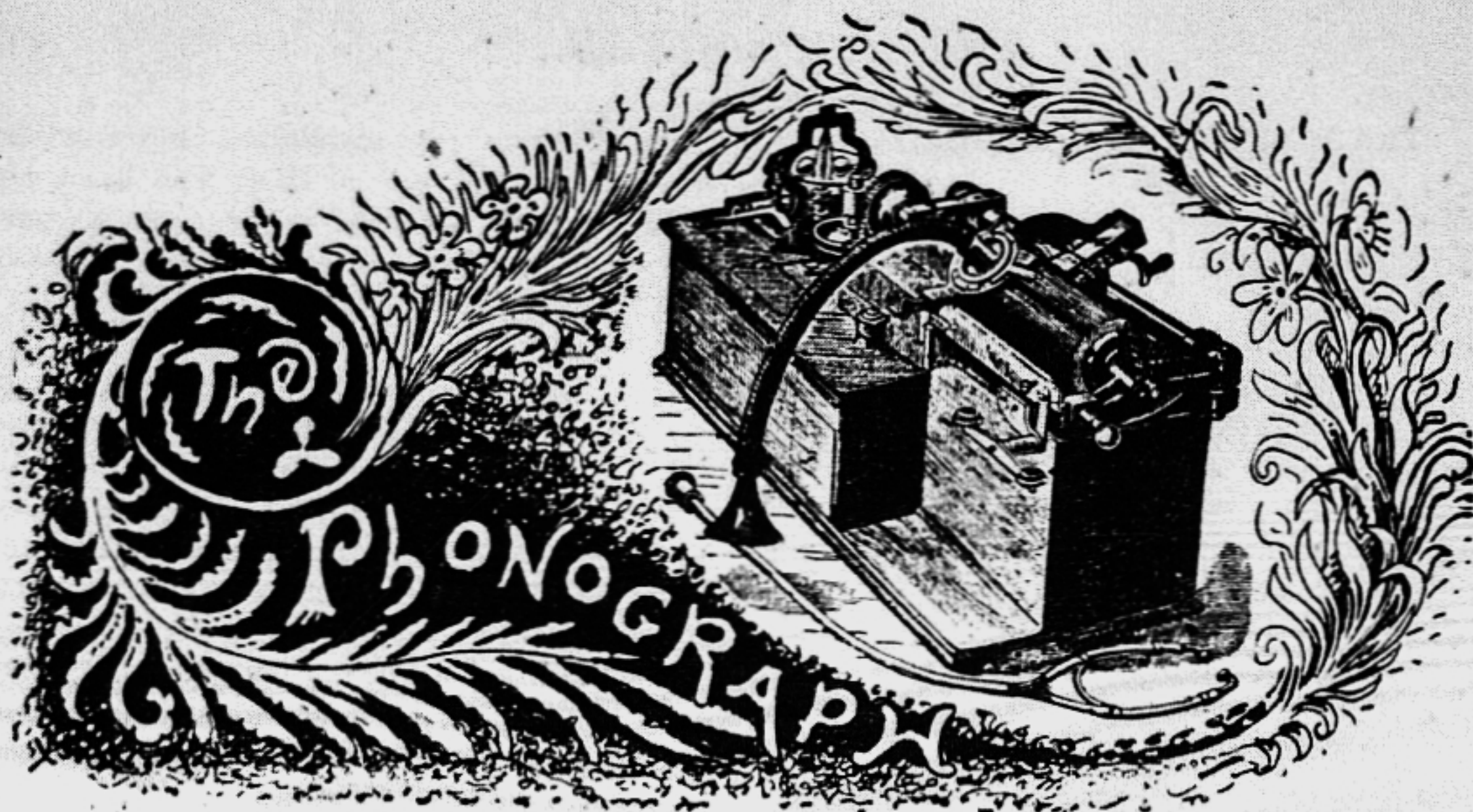
They are obtained through an influential friend, and, being copyrighted, cannot be duplicated. Those who are anxious to secure these pictures should therefore take advantage of this opportunity, since it may never occur again.

For prices and information apply at the office of THE PHONOGRAM, room 87 Pulitzer Building, New York.

The Phonograph in Musical Colleges.

In the June number of "Music," an interesting article from the pen of Mr. H. D. Goodwin, of Wisconsin, appears, advocating the introduction of the phonograph into musical colleges, where he believes it will afford valuable aid to both teacher and pupil. Where repetition is desired as a help to the acquisition of musical skill, this instrument is most useful, as it can be made to repeat an air any number of times. Taking musical dictation from it is an excellent method for learning to write music. Mr. Goodwin says: "This method of practicing will open a new vista to many a musical student and enable him to acquire by diligent study a facility in determining tonal relations such as Mozart possessed as a divine gift."

"Westward the Star of Empire takes its course," i. e., the wide-awake Western cities, like Omaha, Denver, San Francisco and Portland are abreast of the times in using the phonograph and appreciate its champion THE PHONOGRAM.



THE MUSICAL INDUSTRY OF THE PHONOGRAPH AMONG SOME OF OUR COMPANIES.

THOMAS FULLER, a quaint writer, gives the following definition of music:

"Music is nothing else but wild sounds civilized into tune and time. Such the extensiveness thereof that it stoopeth so low as the brute beasts, yet mounteth as high as angels. For horses will do more for a whistle than for a whip, and by hearing their bells jingle away their weariness."

The editor of *Presto*, a music journal published in Chicago, adds to the definition of this old English writer another which throws further light on the subject:

"There is not an emotion of the human heart but it may be intensified by music and there is nothing but may be made better by melody."

We are convinced that the evolution of the musical phonograph from the original reproducing and recording instrument constructed for man's practical uses, was founded upon a sentiment akin to the above and that Mr. Edison's soul was attuned to a higher range of thought

when he essayed to capture music and constrain this bewitching yet beneficent Muse to play a role in answer to the call of humanity. Doubtless many a throbbing nerve has been soothed by these sweet influences after prolonged study in the laboratory at Lewellyn Park, from which the fruits of grand ideas germinating there, have issued to startle and at the same time benefit the world.

What the effect of the musical phonograph is, may be thus expressed: it operates upon man's nervous system in two opposite ways, first by subduing undue or ill-directed emotion and regulating the general action of the mind, next by stimulating the spiritual faculties, and awakening those perceptions which lead to the infinite. It performs the functions of tuning that great instrument called the brain, and adjusts its chords as one lowers or elevates the strings of a harp, causing them to vibrate in unison. It may be assumed that the hand-organ among other mechanism capable of rendering musical airs would perform similar duty. To this we reply that the result of the action of the former as compared with the latter,

differs as essentially—as the strains of a Patti or Campanini, or the melody issuing from the fingers of a Paderewski and Rubinstein differ from the sound of a penny whistle or a stage-horn.

It is the power of rendering all the inflections of the voice, the tears or the joy of the voice, and of echoing the grandeur, the compassion and every emotion of the soul as conveyed by instrumental music that give value to this instrument.

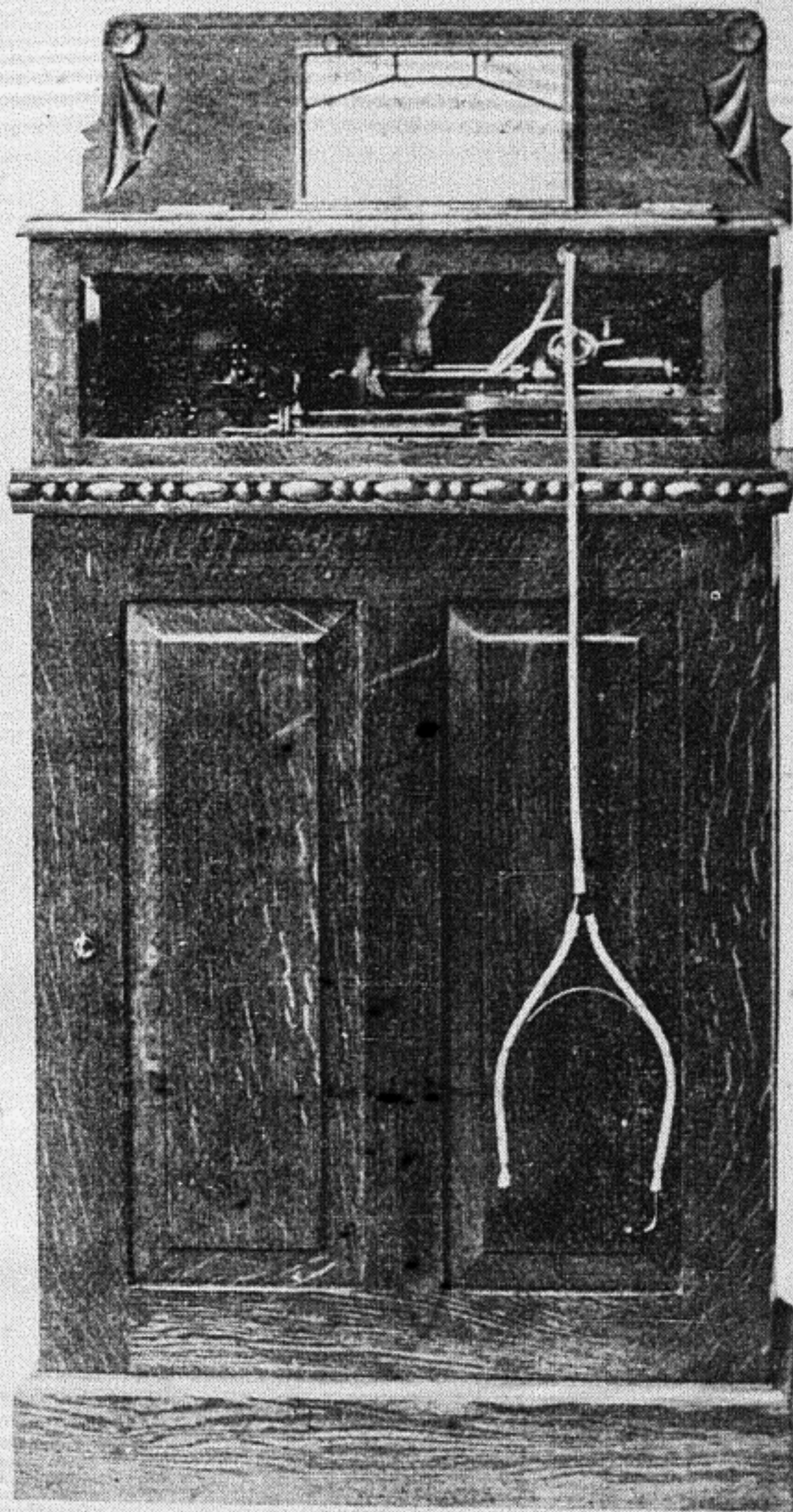
For that reason this industry has assumed gigantic proportions in the United States.

One of the most remarkable facts connected with the musical phonograph is, that it has so quickly commended itself to popular taste and become, as it were, the friend of the people. We believe we may safely assert that there is not a city in the United States in which it is not used, and the universal testimony with regard to the instrument is, that all classes of persons patronize it. Even the weary workman after toiling all day, snatches a few minutes to listen to its strains ere he seeks his home.

When this instrument, which like the American mocking bird, repeats the songs of others, shall be presented at the Columbian Exposition how enthusiastic will be the greeting tendered it; for the reason that music is common ground to the whole human race. Visitors to the fair may not be able to communicate with the inhabitants of this country except through interpreters, but they can at least, through the medium of music, hold an intercourse of sentiment with their kind, for even though they be natives of Greece, or Russia or Hindostan, they can comprehend a patriotic air or a melody that lifts the soul to pure joys.

The accompanying cuts give a full and half-length view of the automatic cases used by the Chicago Central Phonograph Co.

One of the photographs gives a view of a belt attachment (called the Hoit), of which there are a few in use. A larger sign is also in use. The cut gives a good idea of the general appearance. Three or four different slot attachments are used by this company the majority of these be-



Chicago Model.—Full Length.

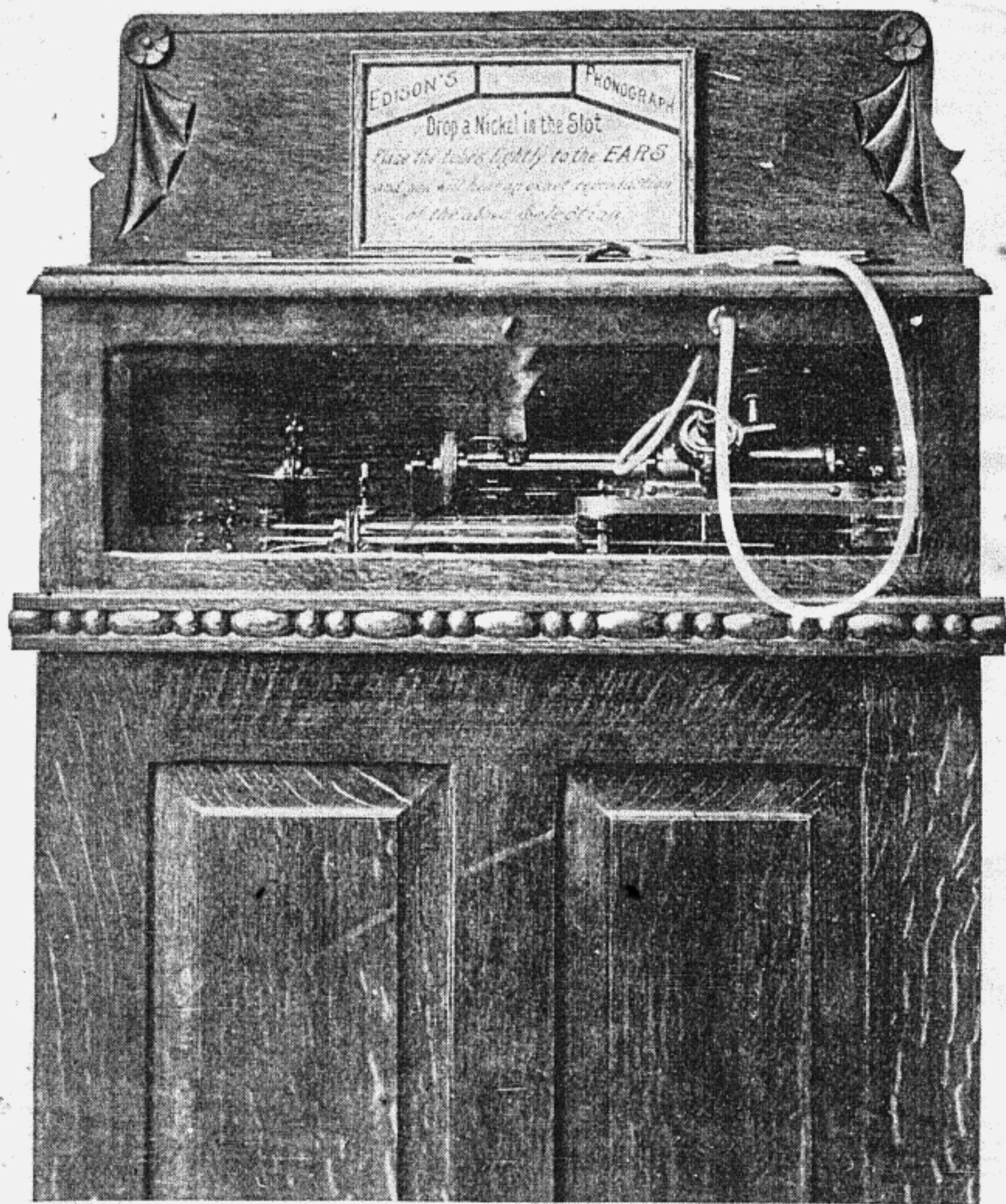
ing manufactured by Mr. H. Hoeschen, of Omaha, and are known as the clock-work attachment. This company has out one hundred coin-in-the-slot machines in Chicago, a number of these being placed in museums and arranged in series of six each. They are of mahogany color, with glass tops, and present a very attractive appearance. Many of these are placed in

the central parts of the city and in the vicinity of Jackson Park, where the World's Fair grounds are located.

This company operates no exhibition phonographs, that is to say multiple hearing tubes. It rents out, however a number of these machines to people who make it a business to take in picnics, suburban towns, etc.

giving the preference to men who can make records in which every word can be understood; and it finds that records by singers who can do this, take much better than the records by singers who have better voices, but who fail to make themselves plainly understood.

The devices on next page comprise a return attachment and a nickel-in-the-slot



Chicago Model.—Half Length.

The Chicago Central P. Co. is arranging to make a very creditable exhibition of these machines at the World's Fair. The vocal records made by this company are unsurpassed in excellence. It employs for this purpose the theatrical talent which is constantly traveling about the country,

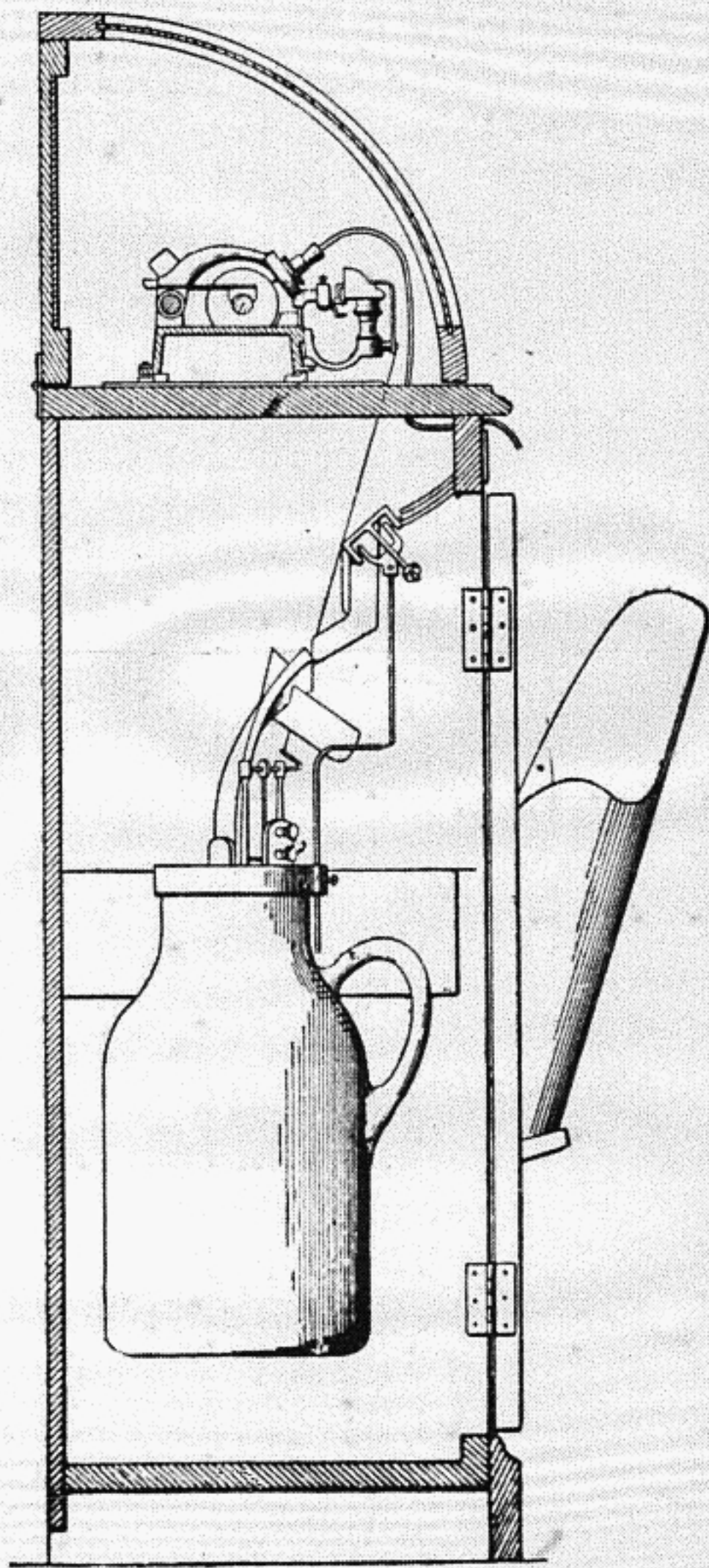
machine, and are covered by two patents, and manufactured by the Ling Manufacturing Co., of Detroit, Mich.

Mr. J. H. Ling first conceived the idea from using a phonograph in his place of business as an advertisement. At first the phonograph was fitted only with a

horn to magnify the sound, the arm being returned by hand when the record was completed. As this made it necessary for one person to watch the machine and keep it running properly, Mr. Ling tried to find a method for automatically returning the arm, and succeeded after a time in constructing a device that did the required work. The phonograph equipped with this device was placed at the entrance of

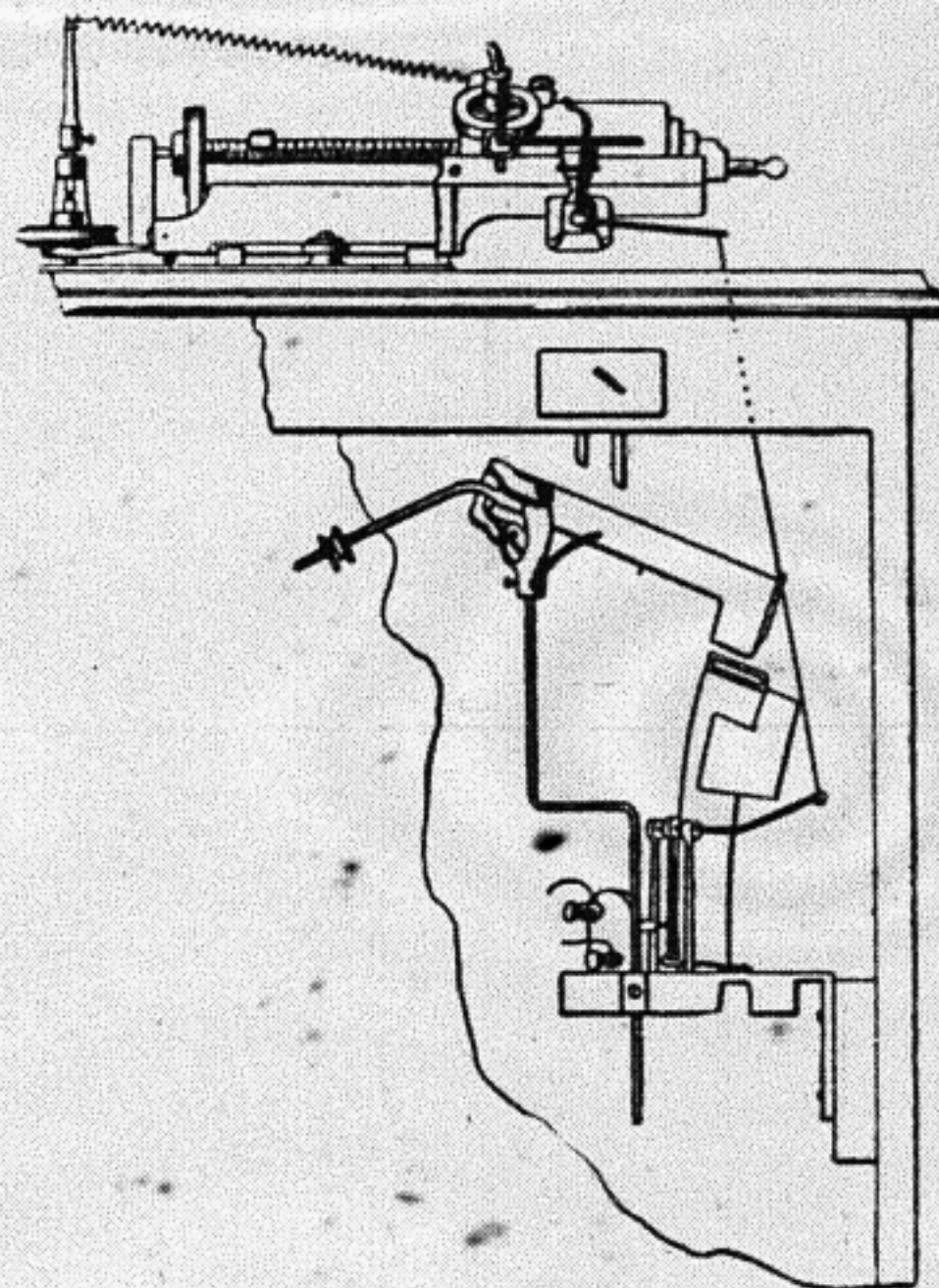
tical trial. This was had, and demonstrated the utility of the attachment, but Mr. Ling; wishing to supplement his invention, commenced to work on a slot machine to be used with the return device. After some months of labor and experiment he produced the present machine, which for simplicity, economy and reliability is not excelled.

After repeated trials, the Michigan Phonograph Co., convinced of the value of the inventions, placed a large order with



Ling Device.—Michigan Phonogram Co.

his store, and large crowds thronged the place, attracted and delighted by the operation of a machine that required no attention from the employes except to change the records from time to time. The attachment finally attracted the attention of the officers of the Michigan Phonograph Co., who recognized its value, and negotiated with Mr. Ling for a prac-



Ling Device.—Michigan Phonogram Co.

Mr. Ling, and for more than a year the machines have been in daily use in its handsome concert hall, where hundreds are attracted by the novelty and regaled with delightful music.

We gave in a previous number of THE PHONOGRAM an extended account of the coin-in-the-slot cabinet used by the Ohio Phonograph Co., with a full-length cut of the same, which is herewith reproduced. The remarkable success of this company, in developing the musical feature of the phonograph, has made it worth while to publish facts, so as to enable others who are pursuing the same line of business to develop that branch.

It will be observed that this cabinet differs from all others used by local companies in the fact that, instead of the body extending to the ground, it is mounted on

carved legs, thus raising the body of the cabinet from the floor, where it is likely to be injured by parties scraping their feet against it, and also being injured when the floor is being cleaned. These cabinets are made of oak, and the later patterns have considerably more carving upon them than the one in the cut, besides having brass claw-feet instead of the plain brass ones as shown in this illustration. The

plain panels shown in the cut are now handsomely carved, the locks have ornamental escutcheons, and the flat top has a carved scroll added, raising the center slightly with greatly improved effect.

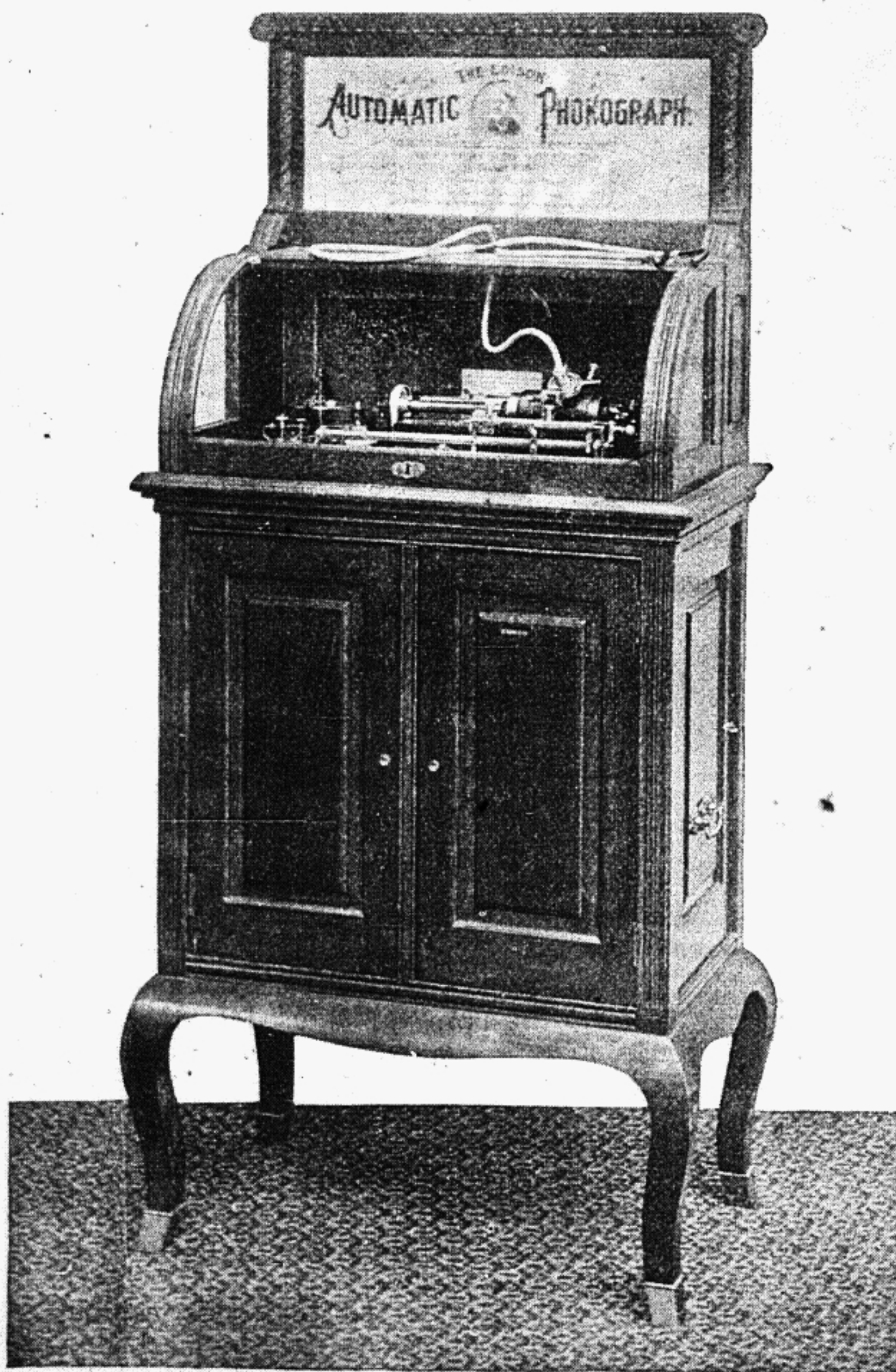
Much attention is given to the manner of announcing the selection on the phonograph by leaving a large space for the announcement card and by having such announcement printed handsomely in script

type occupying as much space as possible. Attached to the side of each machine is a napkin and holder to enable parties to cleanse the hearing tubes before listening, in case they desire to do so. These are changed frequently and are always neat and clean.

It has been found that the size of the hearing tube is quite important, and that the sound can be greatly increased by having tubing of good size and of sufficient strength to prevent the bending of the tube while being used, which cuts off the sound of the record.

The Ohio Phonograph Co. has adopted this class of cabinet exclusively, and has supplied several of the local companies with the same cabinets and automatics, even companies who are generally using another style of machine.

The automatic attachment is one which is thoroughly reliable in every respect, and the Ohio Phonograph Company ha



Ohio Model.

developed, after a long and persistent study of the question and much experiment, an automatic cabinet and phonograph on which a record may be placed one morning with the confident assurance that the inspector the next morning will find it in perfect adjustment and condition, and giving satisfactory results for a nickel dropped in the slot.

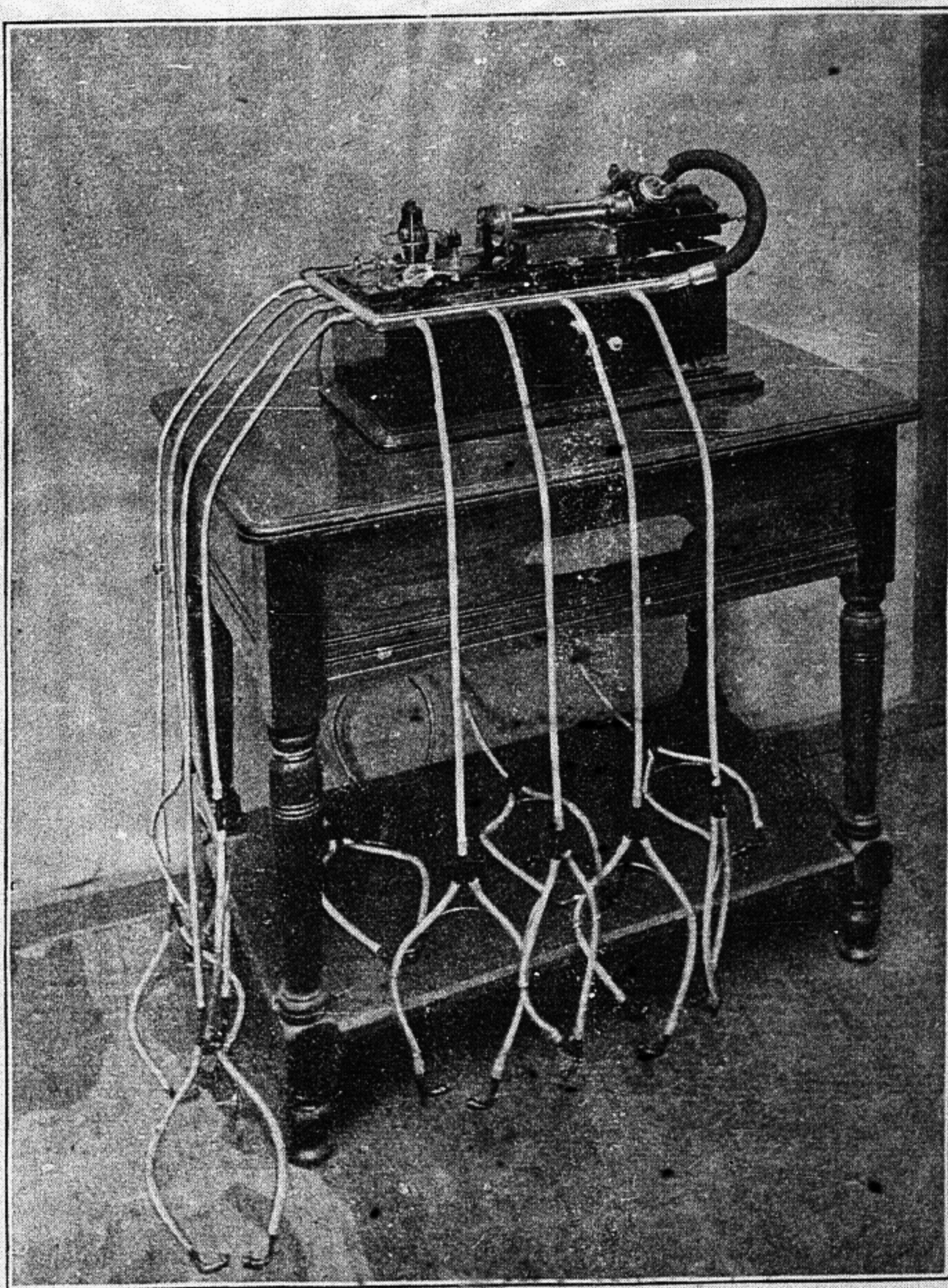
The New York Phonograph Co. has phonographs equipped with fourteen and sixteen-way hearing-tubes in many of the large stores of New York, at public resorts and during the season at adjacent beaches. Mr. George B. Lull also placed a large number of these instruments at Saratoga. There is a fine musical repertoire which is changed every week. An operator is always in attendance, who changes the music according to the wishes of the audience, and attends to the adjustment of the instrument. This is a desideratum; but it is not always found where machines are exhibited.

The coin-in-the-slot cabinet, in use by the New-England Phonograph Co., a cut of which is here given

is the cabinet first introduced by the Automatic Exhibition Co., of New York.

Several hundred of these are in use in the city of Boston and adjacent towns, and also have been placed this summer at all the summer resorts and beaches, including Nantasket, Nahant Hotel, Bass Point, Relay House, Nahant, Lynn, York Beach, York Harbor, Kennebunk Beach, Old Orchard and Cottage City.

At Old Orchard a store was hired, and



Multiple Hearing Tubes.

a fine emporium was fitted up for that purpose. The ceiling was handsomely decorated with flags and Chinese lanterns; the floor handsomely carpeted and fifteen machines were placed there. At Cottage City was a similar emporium, but not as many machines. All of the New England Co.'s automatics are in clus-

croft, of the Boston office, who makes a weekly visit to each place, making the collections and settling with the parties who have the machines on their premises. Thus far on the Massachusetts Coast the machines have done extremely well.

So far as the competition between the multiple hearing tube and the automatic



New York Exhibition Co.'s Model.

ters, and are in charge of individuals who take care of them night and day. The whole are in charge of Mr. F. H. Ash-

is concerned, the slot interest has not been affected to any extent, and the slot cabinets that are well taken care of, with the

best cylinders put upon them, continue to make good money.

It is a singular fact that the talking records of the "Casey" series have made more money on every machine where they have been put than all bands, songs, banjos or other records; they lead by a large per cent over any record that is now before the public.

The rule has been to place automatics in groups of five, ten and fifteen in charge of a person who stands by all the time and takes care of them.

The Louisiana Phonograph Co. has placed over one hundred machines in New Orleans, and they stand in the most desirable places in the city, forming an attraction and amusement for patrons.

The first machine was put out in Eugene May's Palace Drug Store on Canal street. This is one of the handsomest and most ornate drug stores in the country, having the finest fountain and the best soda trade in the city, and its selection for the initiation of the exhibition business was very fortunate. The machine made an instantaneous hit, and the results were very surprising. Week after week the machine worked steadily almost day and night, and the receipts from this one machine, for its first three months, averaged over fifteen dollars per day.

This machine was rapidly followed by others, and while it was the most successful machine placed in the city, the receipts from all are now most encouraging and well sustained.

The Louisiana Phonograph Co. takes a large amount of local music, and also obtains records from every part of the country.

New Orleans is perhaps the most gen-

erally musical city of our country, and its musicians are very fine. In addition to all kinds of instrumental and vocal music, the company has gotten out a line of negro specialties, of great popularity, consisting of old plantation songs, darkey melodies, etc. Probably the most successful specialty is the work of "Brudder Rasmus," whose sermons, such as "Charity ob de Heart," "Adam and Eve and de Winter Apple," "Sinners, Chicken Stealers, Etc.,"



Louisiana Model.

and "De Lottrey," are unique and interesting. We received the last named records which were referred to in a short notice in our last issue.

The Georgia Phonograph Company uses the Wright Cabinet, with round top, and full glass. The adjustments in this style of cabinet give better satisfaction than many others because they are more reliable. The automatics are placed in leading drug-stores where soda water is dispensed, at the most prominent bar-rooms and in the principal hotels. Twelve of these ma-

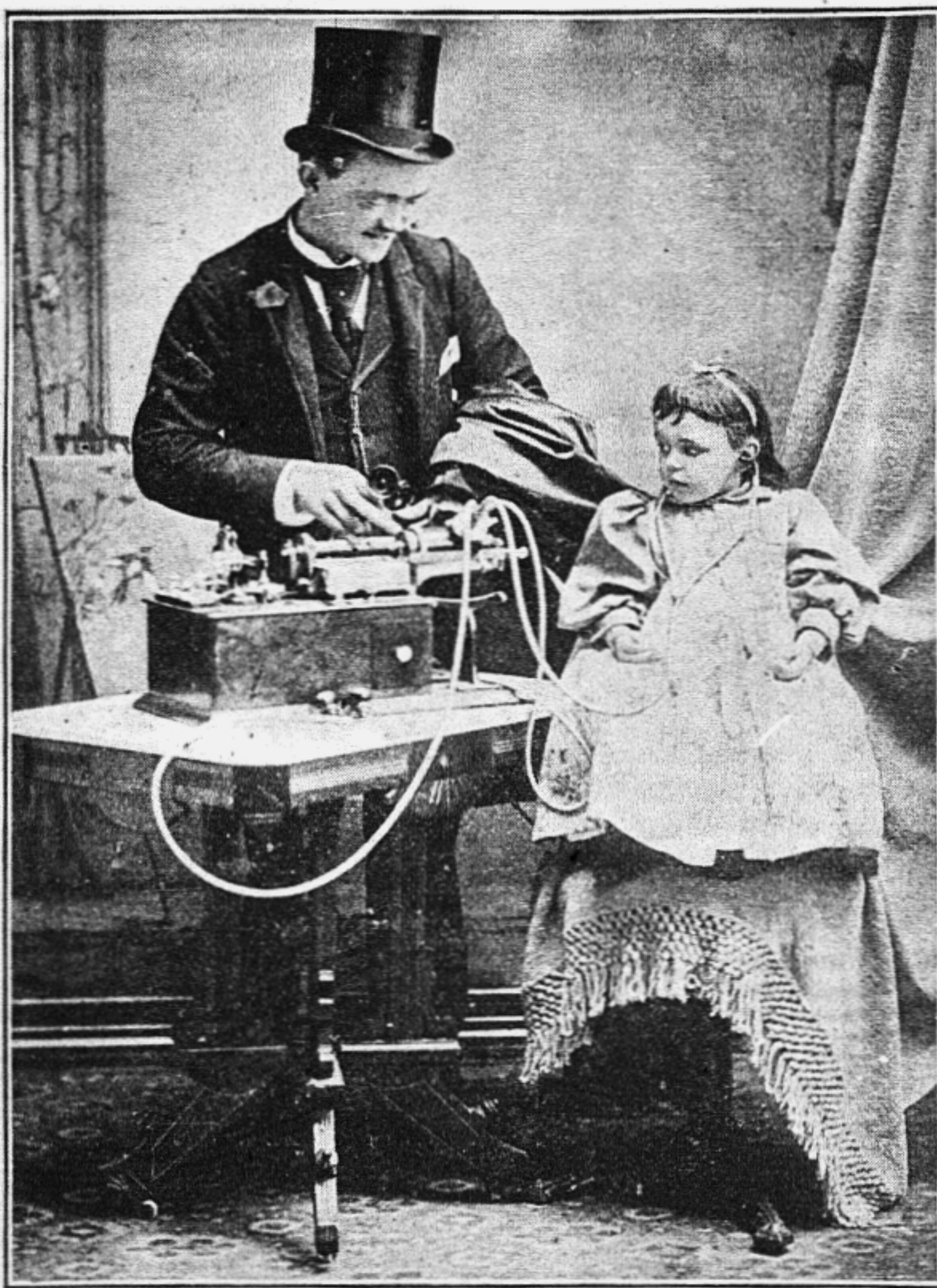
way tube the public has a chance to order what it pleases, and at the same rate as with the automatics. In the principal cities, Augusta, Savannah, Columbus and Macon, agents attend to the slot machines and are paid a percentage of net receipts. This company rents outright to traveling agents, and they have the privilege of the entire state except in those cities

where the company has its special agents. This company estimates the A. A. two-hundred-hour battery as the best at present, though good results are obtained from the Bradbury Stone, and the 15^m styles. The company charges in series connections from a 500 volt current, using a one horse-power motor of ten volt discharge and generator of 20 A. M. up to 10 cells; that mode is found quickest, most handy and safe, as there have been several batteries ruined at the power house, due to such varying in potential.

The phone business was at first put into incompetent hands, and never being fully up to guarantee, the company received a back-set from which it has never fully recovered.

The business will doubtless greatly increase this Fall, as confidence has been established in the minds of the general public.

Phonograph agents should see to it that the "Ten Reasons" in this issue is widely distributed.



A Young Critic.

chines are placed in the city of Atlanta, and although this has been financially a hard season, these machines pay well.

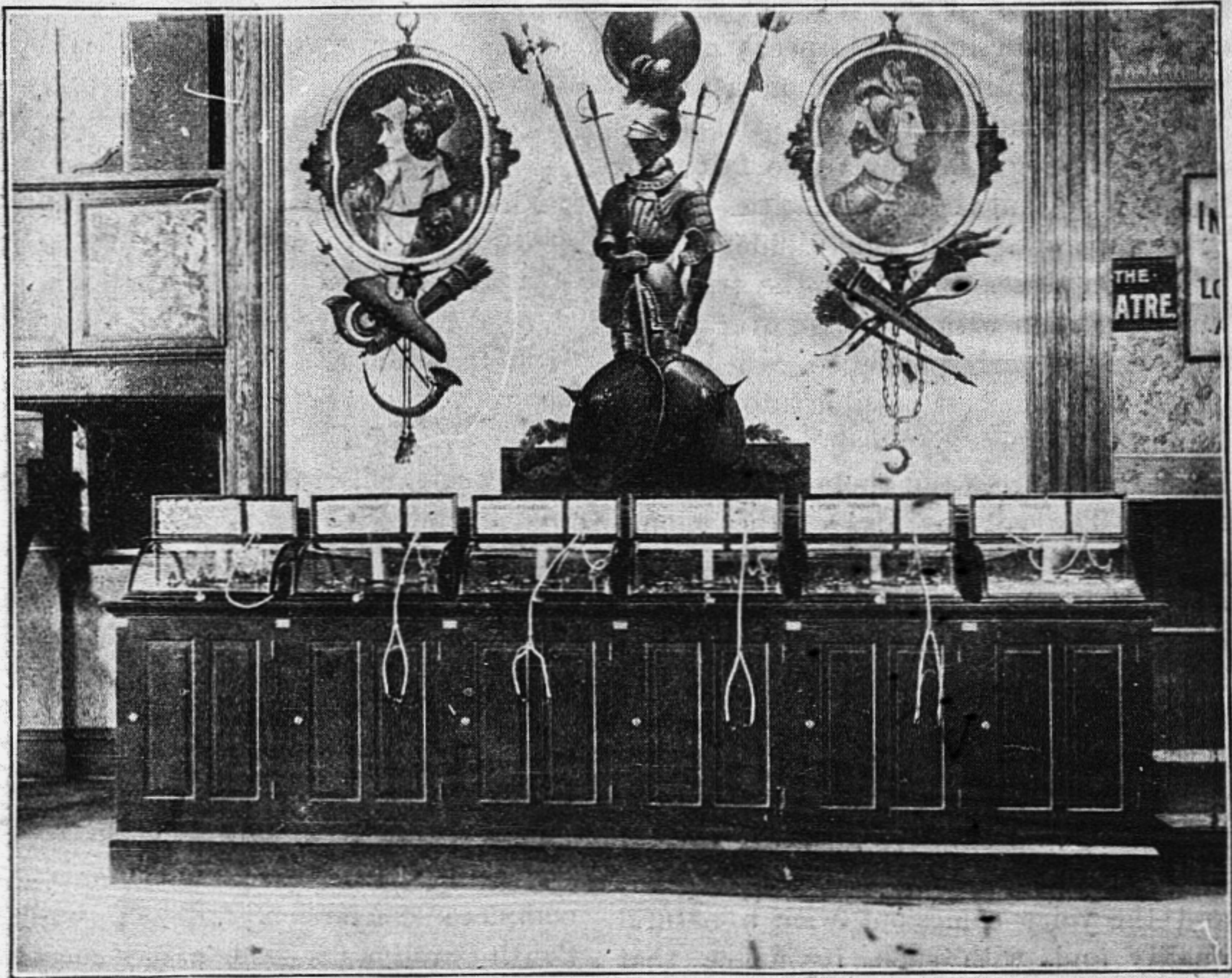
At one office the machine is set up for dictation purposes, and with a fourteen-

The Phonograph the Engine—Type-writer the Tender.

The following from the pen of George H. Guy, recently appearing in the *New York Commercial Advertiser*, is a tribute to our subject that carries weight, and is appreciated by us, and the intelligent busy public :

The phonograph has probably seen more ups and downs than any other instrument of equal usefulness. When first presented to the public it was not commercially serviceable, and its early days were beset with

phonograph. The new instrument was tried in many offices and pronounced a failure. The user either would not or could not learn to adjust it properly, or did not know that phonograph dictation had to be learned like any other art—the accomplishment is of the simplest possible description, but it is absolutely necessary—or the regulation of the batteries became an irksome task ; at all events, the ultimatum was pronounced, "He couldn't be bothered with it," and the phonograph company was requested to take the instrument away. Men of more



Group of Phonographs, vicinity of Jackson Park, Chicago.

legal complications and financial obstacles. Later Edison again turned his attention to the instrument that he knew had more in it than had yet been brought out, and he eventually produced the perfected

intelligence and patience, however, had, as a rule, a very different result from this, and the instrument is now rapidly gaining ground, and is spoken of most enthusiastically by those who use it daily. In

Washington the old method of dictating to a typewriter is declining, and the stenographer dictates his notes direct to the phonograph at any speed at which he can read them. The convenience of this plan is almost incalculable and the saving in time immense. Commercial men are just beginning to realize what it means to have a phonograph at their elbow and appreciate the ability to dispose of a mail of a hundred to one hundred and fifty letters in a morning. In novices at phonograph dictations there is generally a little nervousness and a disinclination to subject possible repetitions and mistakes to the critical ear of the typewriter; mannerism and hesitancy of speech are not noticed in ordinary dictation after the ear has become accustomed to them; but on the phonograph they are so faithfully reproduced that their peculiarities become more apparent. But this diffidence, as a rule, soon passes away, and the triumphant expedition with which an overwhelming mass of correspondence can be disposed of is the best possible tutor in enabling the business man to do justice both to his own resources and those of the instrument. The popular idea of the phonograph is gained from the nickel-in-the-slot instruments that are distributed all over the country, the records on which are but too often thin, squeaky and unnatural, and utterly misleading as an indication of what the phonograph really can do. The singing and speaking records on a skillfully and suitably adjusted instrument can only be described as magnificent, and the voice comes out with a natural quality and with such resonance that nearly a hundred per cent of the original sound is produced. Such results as these are not to be obtained by a bungler, but that they are available is certain. One of these days the general public will be educated up to the proper adjustment of their phonographs, and then the best and

the truly marvelous results of the use of the instrument will be obtained. What to many employers of the phonograph will be a great convenience is a new toy dynamo, designed to charge two storage cells for driving the phonograph. The dynamo is small enough to be carried in a satchel, and can be run by cord from any convenient engine or shaft.

The Phonograph in Politics.

This is the first Presidential campaign in which the Edison phone has taken a prominent part. It is making up for its past neglect of the great American game of politics by a vigorous and striking effort to serve both parties impartially and well at the same time.

The Columbia Phonograph Co., of Washington, D. C., which city is the center of political activity, report the demand for cylinders containing campaign songs as constant and large. Indiana calls for Grandpa's Hat and Old Tippecanoe; Ohio shouts for eulogies of the McKinley Bill; while the solid South delights in songs depicting the horrors of the Force Bill and the mistakes of Harrison. The Democratic Ta-ra-ra Boom-de-ay and the Republican refrain of the same name are much appreciated. Songs covering both sides of the silver question are wanted. Every phase of politics receives attention.

A Harrison man from Massachusetts writes to express the hope that sound Republican doctrine will be poured into Democratic ears thro' the phone, until complete conversion follows; while a South Carolina fire-eater wishes success to Edison's greatest invention in educating the public to the advantages of Democracy.

A political truth uttered once by an orator of flesh and blood is soon forgotten. The iteration and reiteration of the tireless phonograph makes the statement far

more effective, and the voter cannot escape influence. The phonograph is destined to become an important factor in this field.

A Noted Record Maker.

Mr. Russell Hunting, the originator and maker of the celebrated "Casey Series" of phonograph records and the subject of this sketch was born in West Roxbury, May 8, 1864. At an early age



Mr. Russell Hunting.

he developed a fondness for theatricals, and was often found taking part in the plays of amateur theatrical clubs in his native and surrounding towns. Before he was twenty-one years of age he had travelled extensively, not only visiting every State in his native land, but, crossing the ocean, made an extended foreign tour. Mr. Hunting's first appearance profession-

ally on the stage was at the Fifth Avenue Theater, New York, at the time Edwin Booth was playing in "Taming of the Shrew," being supported by the Boston Museum Company. He has been a regular member of the Boston Theater Company for the past six years, and for the past two years acting assistant stage manager. Mr. Hunting was an early enthusiast on the subject of the phonograph, and leased one for his own private amusement long before he conceived of

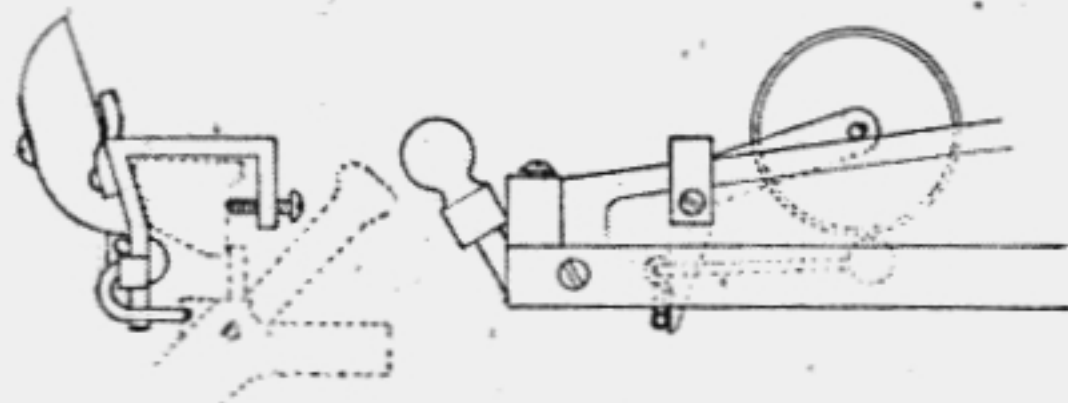
the idea of making records for sale. He tried a large number of experiments with the machine, in the way of reproducing the human voice in large auditoriums. It was probably in this way that he became aware of his own wonderful voice for phonographic reproduction. He at one time made a *whisper record* which was reproduced on the stage of the Boston Theater and was distinctly audible in the gallery of that large house, thereby winning a wager from a fellow actor. He made his first records for the New England Phonograph Co., and they, seeing at once the remarkable quality of the same, made immediate arrangements with Mr. Hunting to become sole proprietors of what is now the famous "Casey Series." Many of these records are really wonderful in their composition; in the "steam boat," for instance, he assumes ten different voices and produces eight

mechanical effects, and all without the assistance of a single person. This record was pronounced by no less a personage than Mr. Edison himself, to be the most remarkable record ever made on a phonograph. All Mr. Hunting's records, except where he employs a chorus of voices or a quartette effect, are made entirely without assistance, and it is a somewhat

remarkable fact, that while his records are all humorous, Mr. Hunting's parts in his profession are always of a serious nature, with now and then a "character" sketch. Thus, in making his records, Mr. Hunting can make his "Bureau," which always convulses one with the heartiest laughter, and the next moment make a record with such beautiful pathos, as "The Dying Soldier." Mr. Hunting enjoys the personal acquaintance of many of the leading lights of the phonograph world, and all unite in giving testimony that the "Casey Records" are without doubt the most popular that have ever been made for phonographic reproduction. On the automatic or slot machine they always return much more money than any other records now in use. During the past month of July, and at the present time of writing, Mr. Hunting has made for the New England Phonograph Co. over two thousand records.

Convenient Attachments to the Phonograph.

As will be observed in the accompanying plates certain useful appendages facilitating the operation of Phonographs are delineated and a description of each given. The bell sounds a warning note as to the condition of the cylinder, the spring returns the diaphragm adjusting lever, and the coil when used according to direc-



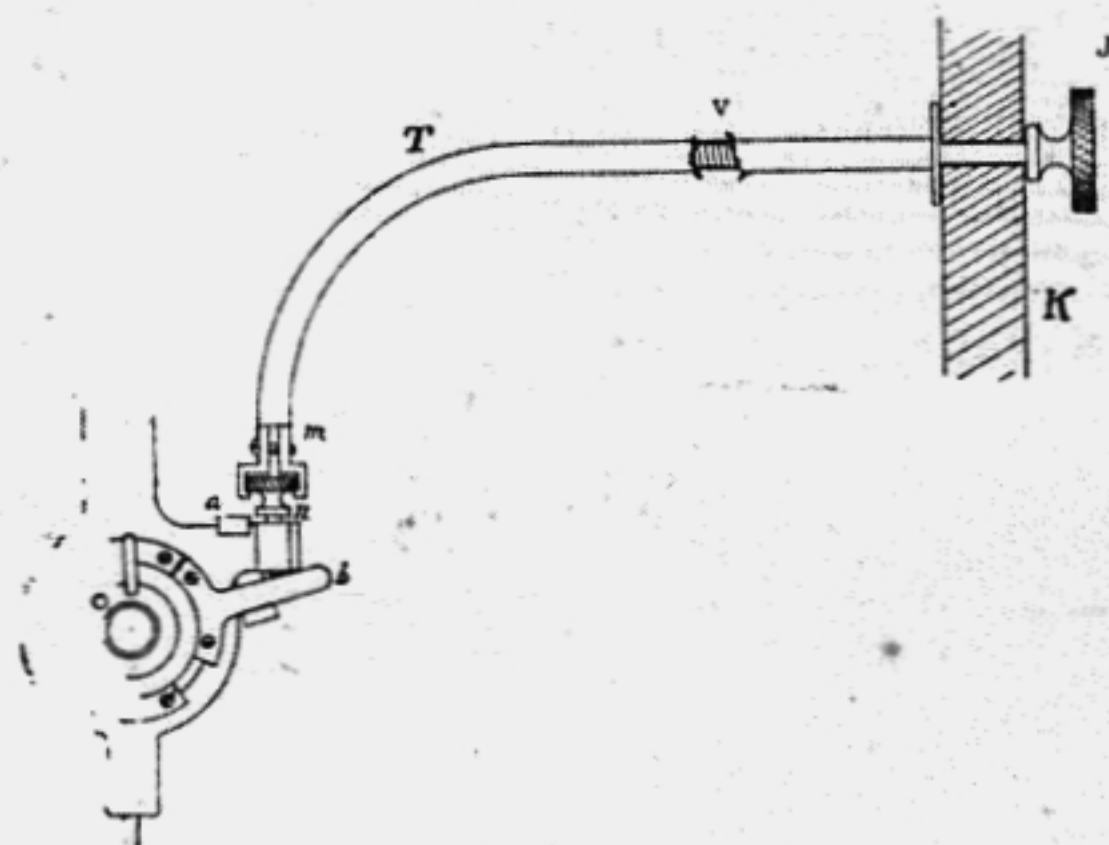
Phonograph Bell.

tions, enables the user of the phonograph to increase or diminish the volume of sound at will.

These attachments are for sale and inquiries with regard to them may be made of Mr. C. F. Jenkins, the patentee at No.

900 K street, N. W., Washington, D. C.

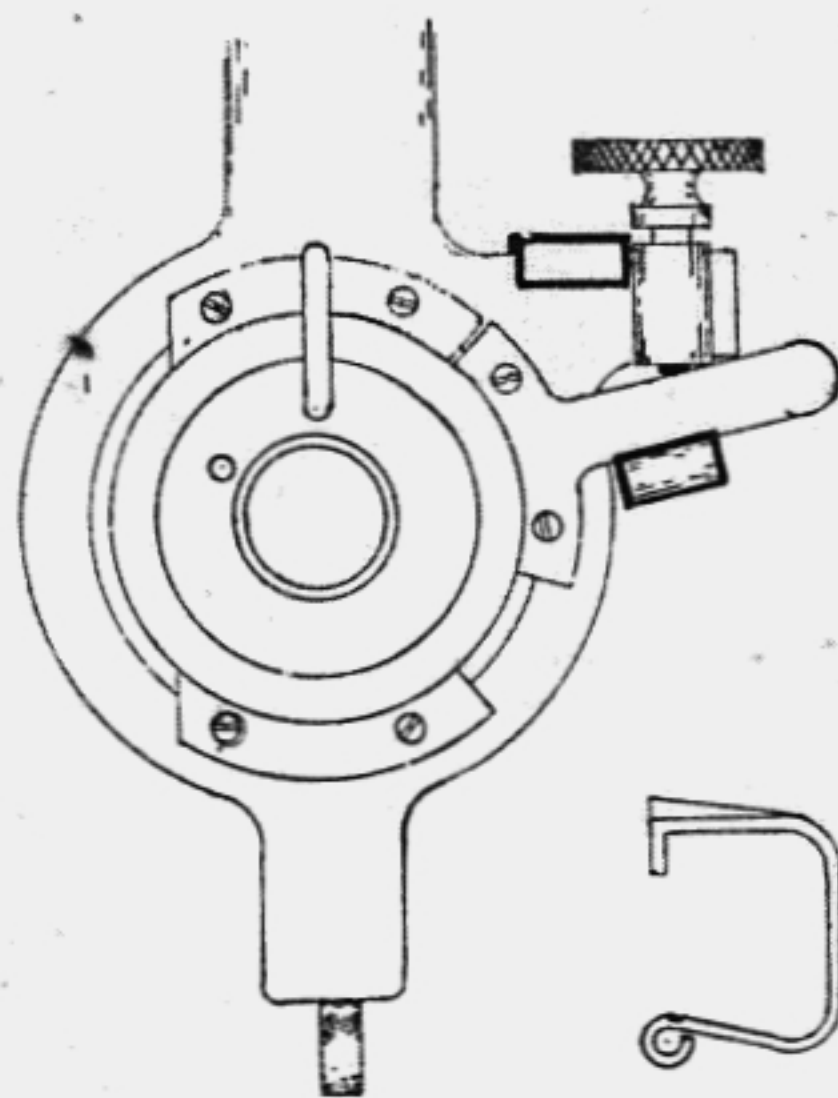
Adjusting springs, for returning the diaphragm lever after being pushed down with the adjusting screw. By the aid of this spring the operation of the screw alone accomplishes the most delicate ad-



Diaphragm Lever-Adjusting Coil.

justment. The spring is snapped on from behind the adjusting screw arm, so is concealed.

Bell attachment, for warning the dictator as he nears the end of the cylinder. Stroke clear and distinct. Easily attached



Diaphragm Adjusting Spring.

and detached. Can be set to ring at any distance from the end. Made in one piece and fully nickel plated.

Medical cylinders, for the cure of the deaf. Identical with those used by Dr. Garey, of Baltimore, in his wonderful cures,

as reported in a recent issue of the "PHONOGRAM." Made by improved machinery, every indentation clear cut and absolutely accurate.

The Great Mercantile Agency of R. G. Dun & Co. Use the Phonograph.

The important communication herein furnished with regard to the phonograph is from the pen of Mr. H. M. Morrow, the accomplished private secretary of Mr. Erastus Wiman, well known to most New Yorkers as a director in the Western Union Telegraph Co., president of the Staten Island Railway Co., and the man who, by building the Arthur Kill Bridge, added ten miles of water front to the harbor of New York. Mr. Morrow is a native of Belfast, Ireland, and one of the principal corresponding clerks in the celebrated mercantile agency of R. G. Dun & Co., in which firm Mr. Wiman is a partner. This establishment has one hundred and fifty branches in the United States, and has in operation a large number of phonographs. Mr. Morrow has been for twenty years a stenographer, possesses a knowledge of several modern languages, is a Liberal in politics and religion, and keeps abreast of the times by familiarizing himself with all inventions which tend to facilitate the labors of the bureau.

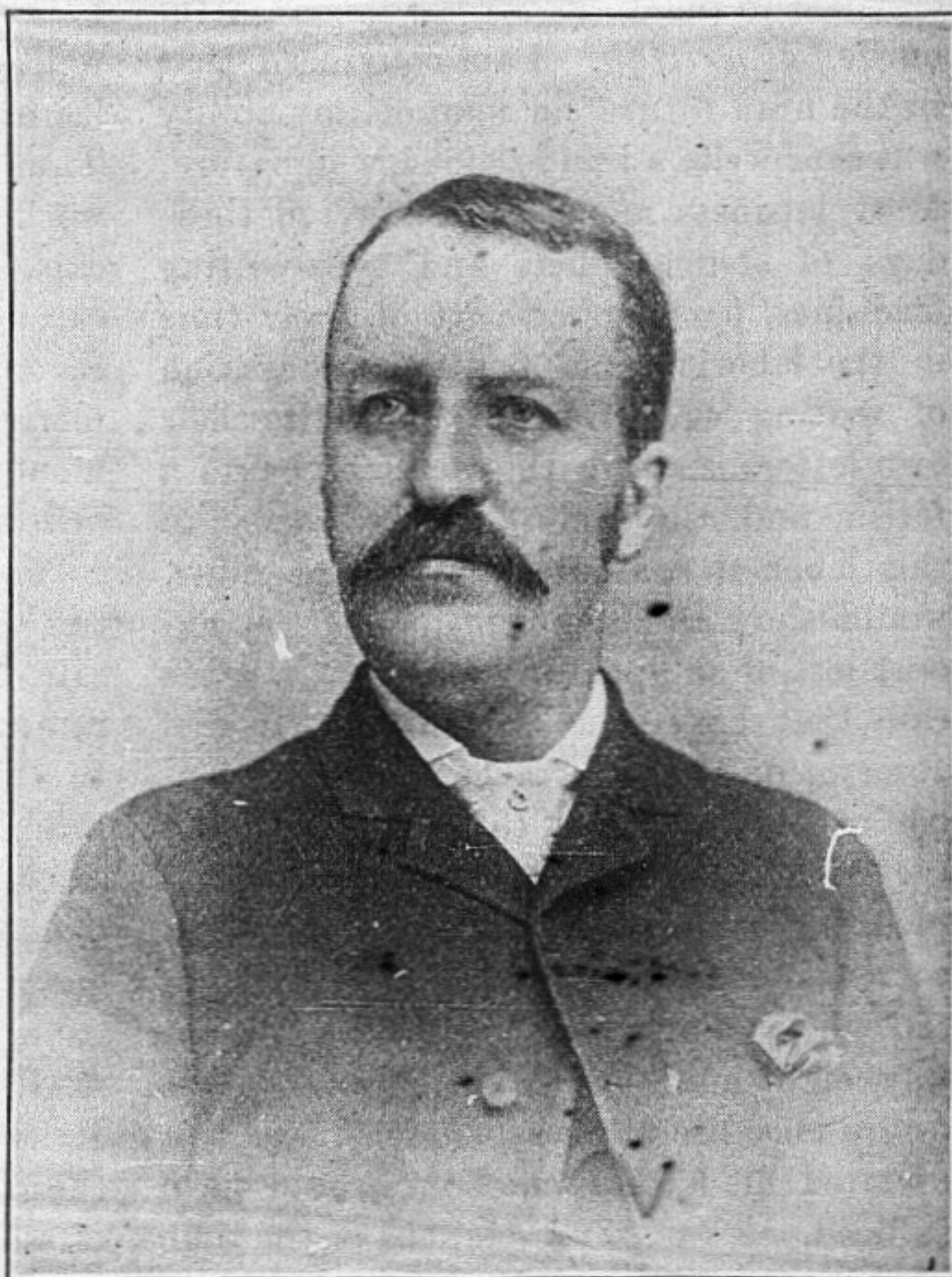
Performing Double Duty.

At the present time experiments are being conducted at Brussels with an invention of Mr. Edison's, by which telegraphists are able to transmit dispatches and to receive at the same time the observations of a correspondent by telephone;

in this way no time is lost in comparing the dispatches or in correcting errors.

Reindeer Introduced Into Alaska.

Last year a little troop of reindeer was introduced into Alaska—sixteen in number. They have prospered there well enough to justify another effort of this



Mr. H. M. Morrow.

sort during the present year, which ought to comprise at least a hundred head. The climate and resources of Alaska should agree with this animal as well as those of Siberia, and it is well known how valuable the services of the reindeer are in cold countries. The present experiment of intelligent acclimation is one that ought to be made more frequently among civilized people.

THE PHONOGRAPH SUPERSEDES THE PEN.

H. M. MORROW.

"I consider the phonograph one of the greatest inventions of the age, with immense possibilities before it, and of an economic value placing it in rank with the telegraph and the electric light. It is, I think, destined to relieve men from the frightful burden of *writing*. I am convinced that in the near future no man of any ability will ever write a line except his signature. Most business men, even now, in these days of stenographers and type-writing machines, pass a great part of their time in the laborious and fruitless occupation of writing with a pen. To indite their own letters is still with some merchants a fetish, and the time literally wasted in this labor if computed at its real value, would show an amount of money and energy lost of an appalling magnitude. One case that has come within my personal observation is that of a gentleman, member of a large firm in this city, who died very rich, a most successful, energetic and plodding man. He conducted his firm's correspondence and wrote every letter himself. For many years he labored in this way, eight hours per day. *Seven* of those hours were literally wasted, for if he had dictated his letters, *one* hour would have sufficed. Thus, seven-eighths of the time of this successful merchant was absolutely lost. He died worth a million in spite of all. How many millions more might he not have possessed had he devoted that myriad of lost hours to other efforts.

"I have used the phonograph for eighteen months. I dictate to it all my shorthand notes and all the letters, reports and other matter I put together myself. I used to transcribe all this on the typewriter, which I found laborious and unsatisfactory, notwithstanding the superiority of type-

writing to pen writing. Of course, three-fourths of my time was spent at the machine, during which period I was unavailable for dictation or any other work. Under my new system I dictate everything to the phonograph, and a young typewriter, well informed and clear headed, who is learning to be a stenographer, transcribes. Thus I save a clear forty minutes of every working hour and practically *triple* my capacity and value. In other words, I can now, with the aid of the phonograph, accomplish as much in one hour as I formerly did in three. The relief from the monotonous labor of typewriting is immense, and the improvement in my physical and mental health is most marked. I can dictate to the phonograph at the rate of one hundred and fifty words per minute or more. A pen writer writes twenty-five words per minute if he takes infinite pains, and a typewriter thirty to sixty words. These figures tell their own story. Then think of how much pleasanter and easier it is to *utter* what you have to say than to write it, or typewrite it with infinite labor. Stenographers generally are opposed to the phonograph on the ground that it throws some of them out of work. But, on the other hand, it will tend to weed the profession of incompetent people who ought never to have been in it, and do away with the shorthand writer, who is that and nothing else. A stenographer, who is a man of affairs, well read, quick of apprehension, with a knowledge of at least one foreign language, who is familiar with the literature, the politics and the questions of the day and hour, has nothing to fear from the phonograph. It can only be a friend to him, saving his time and his health, and increasing his capacity and value immensely."

INSTRUCTIONS FOR USING THE EDISON PHONOGRAPH,
STYLE "M."

Keep the machine perfectly CLEAN.
Read all cautions carefully.

TO RECORD.

Machine at Rest.

Finger Button "B" (see cut) pressed down.

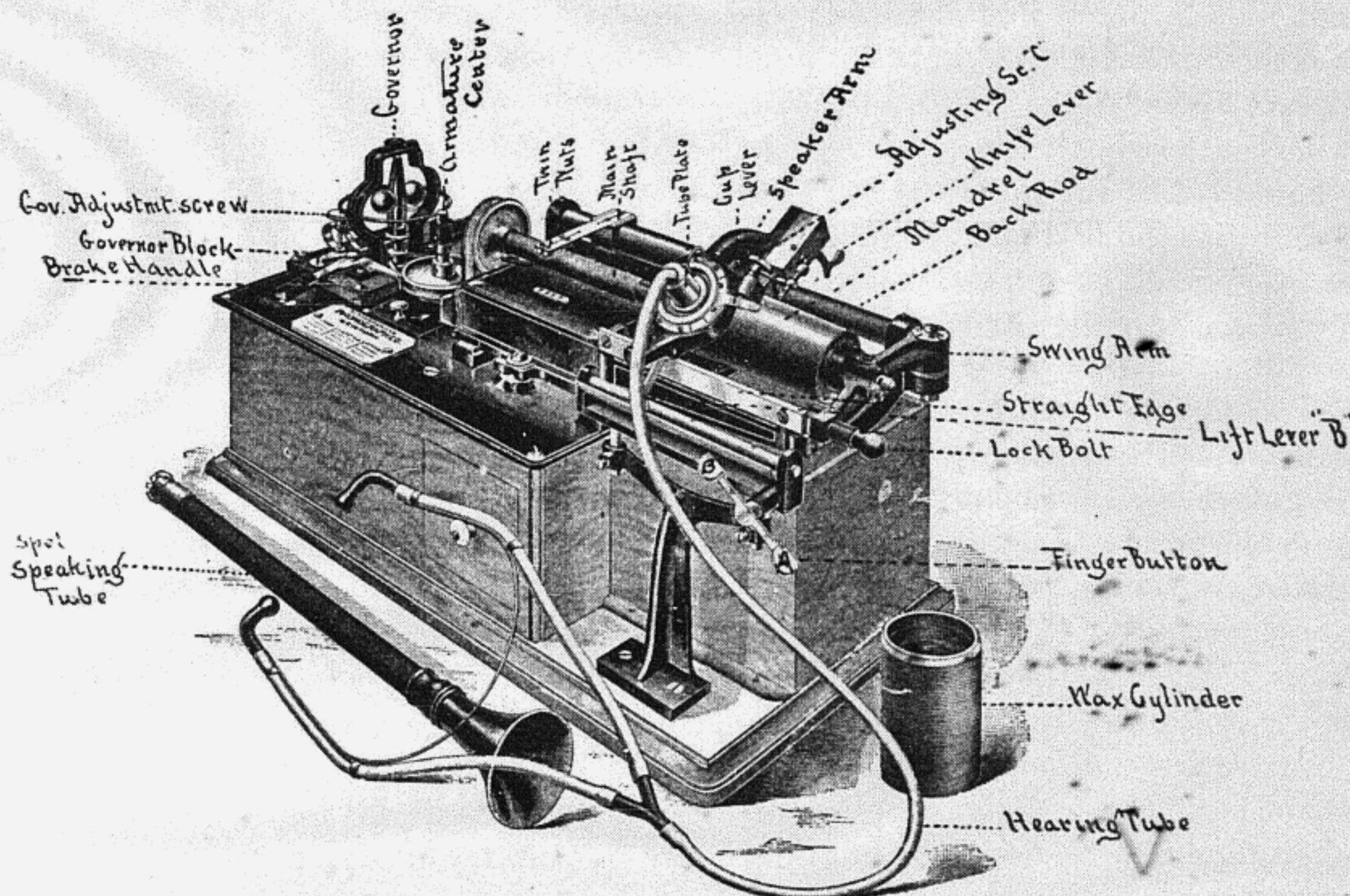
Throw down the LOCK BOLT and open SWING ARM wide.

Slip the WAX CYLINDER, beveled end foremost, upon the tapering brass MANDREL and press it firmly, but not too forcibly into place.

HANDLE to the left until it strikes against the pin.

Machine in Motion.

Place the SPEAKING TUBE upon the TUBE PLATE, lower the LIFT LEVER "B" as far as possible, and commence dictation to the machine. Should it become necessary to pause during the dictation and before the end of the cylinder has been reached; raise "B" (only) until it closes against the speaker arm: this will disengage the TWIN NUTS from the fine thread



Close the swing arm and re-lock it.

Raise the SPEAKER ARM (an inch is sufficient) from the STRAIGHT EDGE, upon which it rests in front, and slide to the left until directly over the beveled end of the cylinder, or the point at which you wish the "record" to commence. Again lower it to straight edge and draw the CUP LEVER down as far as it will go.

Start the machine by pushing the BRAKE

upon the MAIN SHAFT and at the same time raise the RECORDING STYLUS from the wax.

A fine white shaving will appear on the surface of the cylinder where it has been passed over by the stylus. Remove the speaking tube: raise the speaker arm and, throwing it back as far as possible, dust off these shavings by passing the camel's hair CHIP BRUSH very slowly from

left to right. This operation being completed, the "RECORD", as it is now called, is ready to REPRODUCE.

TO REPRODUCE.

Machine in Motion.

Lever "B" up.

Lower the speaker arm and push the cup lever up against the point of the ADJUSTING SCREW "C." Now place the *hearing tube* on the tube plate, and, with the above exceptions, it is only necessary to follow carefully the directions given for recording.

Although the reproducer ball usually adjusts itself to the track or groove made by the stylus, it sometimes occurs that clear reproduction is not at first obtained. To obviate this, unscrew "C" until its point disappears in the sleeve, and while listening with the hearing tube, press the cup lever upward with the thumb of the right hand, and with the first and second fingers of the same hand, turn "C" slowly down until you can hear the record distinctly.

REGULATION OF SPEED.

The speed of the machine in revolutions of the main shaft per minute is regulated by the governor adjustment nut. To increase speed unscrew this nut, and to decrease it screw the nut down.

Observe this carefully when reproducing music, as a different speed from that at which the music was recorded will reproduce an entirely different pitch. The standard speed at which musical records are taken should be about 125 revolutions per minute.

THE TURNING REST.

As this device is not, strictly speaking, an active element in the workings of the phonograph, but merely an appliance for greatly increasing the capacity of the cylinder, a brief explanation of it and of the reasons for its use, seems advisable before again passing to the details of instruction.

The wax cylinder, for economy and to add to its strength, is made much thicker

than is necessary for a single record, and, after the first record has been transcribed or reproduced as often as desired, would be practically wasted, were it not for the turning rest which removes a very thin shaving from its surface. This is of just sufficient depth to take out the groove made by the stylus and leave the cylinder perfectly smooth for a new record. The process can be repeated from twenty-five to fifty times, thus making it possible to use one cylinder for as many different records.

OPERATION OF TURNING REST.

Machine at Rest.

Wax cylinder firmly set upon mandrel; hearing tube removed; cup lever set as for reproducing (up).

Lower the speaker arm and lever "B" about over the center of the cylinder. Hold "B" down firmly with the thumb and forefinger of the left hand, while with the same fingers of the right press the KNIFE LEVER DOWNWARD and towards the machine. Then close "B" up against the speaker arm, slide the latter to the extreme left; again lower "B" and start the machine.

The knife should always be allowed to pass over the entire length of the surface of cylinder, otherwise there will remain a portion of the wax which is thicker than the rest, and if a new adjustment of the knife be made to the right of the end of former cut it will not touch the surface to the left of it. If adjusted to the left, on reaching that part which was before unturned, the knife will take too deep a chip and tear instead of cutting the wax.

After very little practice the eye and ear of the operator will become accustomed to the sound and appearance of a proper cut, and will readily detect anything wrong.

TYPEWRITIST'S ATTACHMENT.

When the trip or typewriter attachment (as shown in cut) is attached to the machine, all of the foregoing directions

should be followed with the left finger button (A) up. By pressing A downward while the machine is in motion it acts in the same way as if the lift were closed.

Its use is a matter of convenience only.

OILING.

Always keep the entire machine perfectly clean and free from dust. It is an essential to perfect work with any piece of machinery, and the phonograph is no exception in this respect.

Phonograph oil should be applied sparingly every two or three days to the following parts :

“Oil hole,” back of governor block.

Base of governor shaft.

Small hole in top of governor frame.

Top center bearing of armature shaft.

Bearings of idler pulleys under which the main belt turns.

End bearings of main shaft.

Thread of main shaft.

Back rod.

Care should be taken not to get any oil upon the belts, as it makes them slip and stretch loose very quickly.

Use as little oil as possible at the top of the governor as spreading down it gets upon the contact and tends to make the motor govern badly.

HANDLING THE CYLINDER.

The wax cylinder, which is somewhat brittle, should be handled gently at first, until the operator becomes practiced.

Thrust the first and second fingers of the right hand into thick end of cylinder and hold fast by spreading these fingers apart. Although touching the surface will not destroy the records, there is at all times a certain amount of moisture in the skin which will leave a mark upon the wax and will in the end make a record sound harsh and scratchy.

Cylinders should be kept in boxes or cabinets made for the purpose, which have perpendicular pegs at fixed distances

to prevent cylinders from coming in contact with each other. Over these pegs they are placed beveled end down. Use the camel's-hair chip brush to remove chips and dust from the wax. Do not attempt to blow it off.

Do not leave the cylinder upon the mandrel for any length of time when the machine is not in use.

The thinnest possible shaving which will entirely remove a former dictation record will leave the smoothest surface and waste the least wax.

GENERAL INSTRUCTIONS, ETC.

TO TIGHTEN MAIN BELT. Loosen the two round head screws which fasten the machine to the top plate and turn screw which is under the mandrel, inward.

TO TIGHTEN GOVERNOR BELT, slightly loosen the four screws which hold the wooden governor block to the top plate, the holes for which are slotted, and slide the entire governor to the left until sufficient tension is obtained.

The sapphires upon the speaker and the turning knife are perfectly adjusted before shipment. Should any of these parts be found out of order, it is best to return them for repairs or replacement to your agent or to the factory.

DICTATION.

A person in dictating correspondence has frequent occasion to pause, and in many cases loses the thread of his discourse. When you wish to stop abruptly in the course of a dictation it is only necessary to close the lift lever without stopping the machine. Should you have forgotten your last few phrases when you again resume, lower the lift lever and raising the cup lever, listen with the speaking tube. The action of the cup lever throws the reproducer into the track some five or six threads back of where the recorder stopped. After listening to the last few words again bring

the cup lever into position and continue dictating (without stopping the machine).

THE CORRECTION FEATURE. As it is a common occurrence to change and correct dictation, we offer the following suggestion :

It will be observed that a cylinder which has been turned from end to end has a smooth and sometimes shining surface. Where the recorder has passed over it, even if no record is made, there is a distinctly visible thread mark. Now if you wish to change anything which you have already recorded, slide the cup lever up for the space of a couple of seconds while machine is running, and upon again drawing it down, record your correction. By doing this you raise the stylus from the wax and leave a small shining strip. The typewriter operator, seeing the mark, listens to the record just to the right of it and hears the correction first.

To avoid errors the names of persons and places should always be spelled out unless the operator is familiar with them.

The speed of the main shaft for dictating should not exceed seventy or eighty revolutions per minute, at which speed it will take about four and one-half to five minutes to cover the entire surface.

Should the end of cylinder be reached before a letter is ended it is only necessary to say "Continued," and finish upon another cylinder.

Cautions.

Never attempt to set the knife while the machine is in motion.

When the turning off of a cylinder is completed, always see that the knife lever is thrown up and back as far as it will go.

When the machine is used indiscriminately for both recording and reproducing, do not leave the CUP LEVER down except while recording.

Do not under any circumstances touch the knife lever while reproducing.

Never attempt to slide the speaker arm from side to side without either raising it or closing the lift lever, as you are liable to damage the thread upon main shaft by scraping the TWIN NUTS across it.

To use your power economically be sure and cut off current from the motor when not in use. Do not allow any metallic substance to come in contact with either the speaker sapphires or the KNIFE.

Oil only where directed. In smearing it upon any other parts you simply set a trap for dust.

Do not remove main shaft from machine unless it becomes absolutely necessary, then use great care in drawing it through center bearing to avoid injuring the thread.

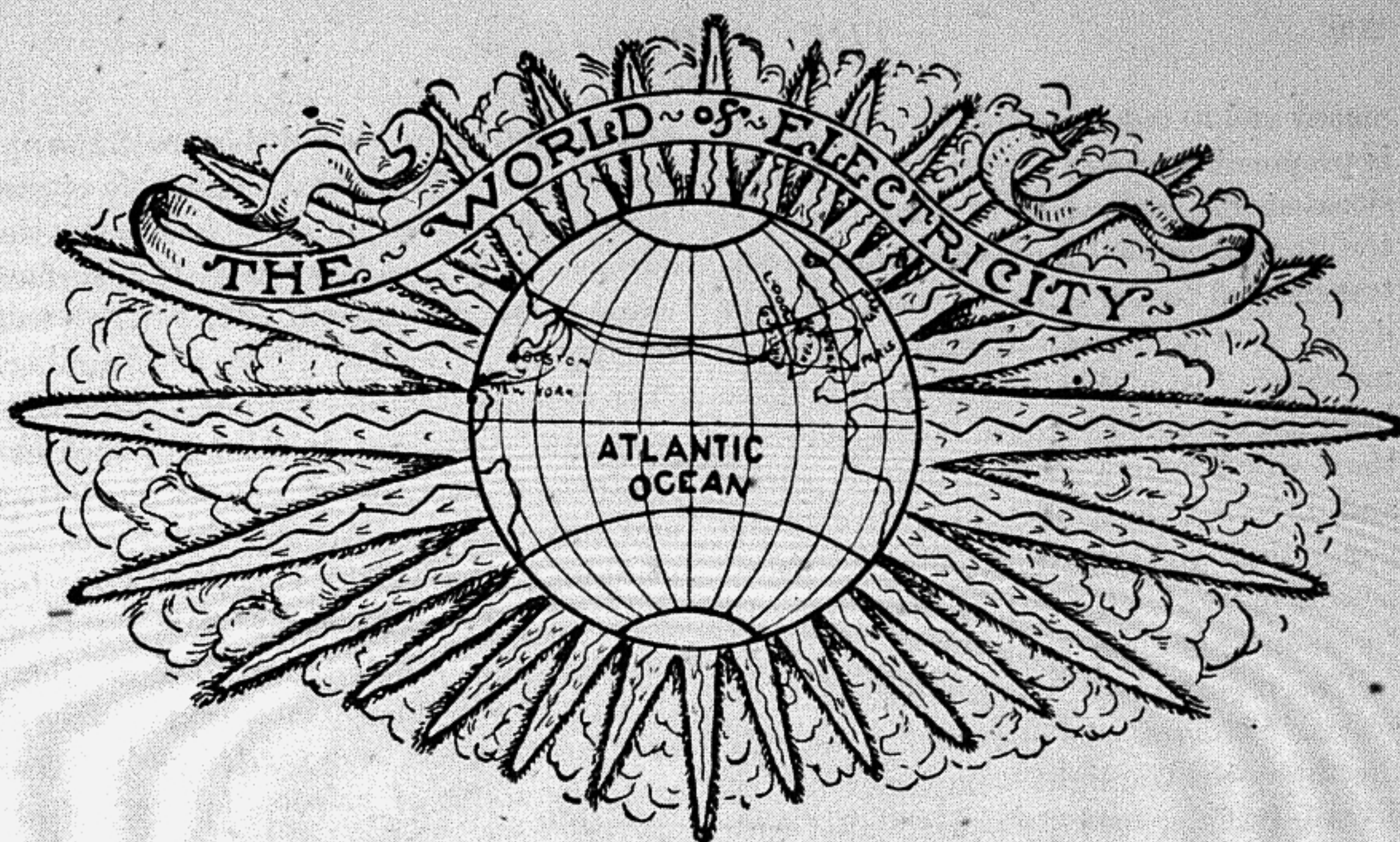
Old Sol Employed to Make a Drawing.

In order to design an object by the aid of the sun upon fruit, a person may cut out a figure of paper, and by means of gum attach it to the fruit before it matures. As the solar radiation does not act on that portion of the fruit protected by the paper, a whitish design will be thus produced on the foundation given by the natural color of the fruit.

This experiment may be reversed and a design obtained of the color of the fruit by protecting (or shading) the other parts with paper. It is this phenomenon well known by all antiquity, which suggested the first idea of photography.—*Revue Scientifique*.

Big Lump of Gold.

Among the curiosities of the Exposition at Chicago, it is proper to cite that a block of gold weighing 225 kilogrammes and valued at 750,000 francs will be exhibited by the proprietor of some mines in Helena, Montana.



THE GREATEST WATER POWER ON EARTH.

H. D. PULSIFER.

SCIENTISTS and statisticians have had for their theme for many years the superb water power resulting from the sudden change of level at Niagara Falls, and nearly everyone has read articles appearing from time to time in the newspapers and other public prints the world over computing the fabulous resources which nature is hourly displaying in this, one of her great wonders; and at last an effort is making to utilize on a gigantic scale some of this power. The plan usually followed in constructing water powers is to build a canal above the dam, or fall, having its outlet below, but still at the higher level, and there discharging the water through water wheels and thence on to a tail race. Several schemes of this nature have from time to time been carried into execution at Niagara Falls, notably the old hydraulic canal, whose outlet a short distance be-

low the upper suspension bridge has for many years been a familiar feature of the scenery known as the "Bridal Veil" falls.

The great tunnel now nearing completion by the celebrated Niagara Power Company is, however, a new departure in water-power systems. It brings the change of level in a vertical plane, not by the construction of a long canal from the upper river to below the falls, and a short tail race from the high level of the bank to the lower river, as is usually done, but by the opposite method of a long tail race from the level of the water below the falls back to the head water of the upper river above the falls, and a short canal to deliver the water directly over the head of the tunnel beneath. The water thus conveyed to the head of the subterranean tunnel will be discharged through penstocks upon turbine wheels giving a clear head of one hundred and twenty feet. The power thus to be developed is esti-

mated at 120,000 horse-power, and this it is proposed to use in the running of mills situated within a radius of several miles of the tunnel head by direct water power, transmitted to the mills by means of rope drives or other approved means of transmission. But after all the available space has been occupied by local manufactories, there will remain a large surplus of power, and this it is intended to utilize in the generating and transmission of electrical power, most of which it is expected will be taken at Buffalo.

The importance of the company's transactions can hardly be estimated. Already the three electric light companies of the city of Buffalo, recently consolidated into one concern, have entered into contract for a supply of power to light that already great and still fast-growing metropolis. The company have also acquired lately from the Canadian government the exclusive right to the use of land in Victoria Park for the same purpose for one hundred years. The river above the Horseshoe Falls on the Canadian side has a branch going around Cedar Island. The power house can be built here, and enough water can be brought through this branch to develop 250,000 horse-power. A feature of these plans which meets with much favorable comment is that the beauty of the falls will not be in the least marred by the presence of factories at any point where they enter into the landscape, but will be situated out of sight from either side of the river bank. Nor will the volume of water diverted be appreciable. The American tunnel, it is estimated, will withdraw but .4 of one per cent, and the Canadian tunnel probably a similar quantity, which is said to cut no more figure than is created by a change in the direction of the wind back toward Lake Erie.

The tunnel now nearing completion is twenty-nine feet in height and eighteen feet in width, blasted out of the solid rock,

and extending from a point beneath the upper suspension bridge back under the city of Niagara Falls, two hundred feet below the surface to its head beneath the surface canal before mentioned. It is 6,700 feet in length. It is first lined with timber, then a course of rubble masonry, and finally with four courses of brick. The rock excavated has been taken out at the upper end and deposited in the river, thus reclaiming some thirty acres of land, for which the company has permission from government. When working at their greatest capacity 1,300 men were employed, and the work has been carried on by night and day shifts of masons, laborers, drillers, etc. The lining of the tunnel went forward at the rate of 200,000 bricks a day. As will be readily seen, this immense number of workmen, together with their families, have introduced a large addition to the population of the place, and they are for the most part accommodated in houses erected by the company about the head of the tunnel. As would be expected, a great many difficulties were encountered in carrying on the work. For instance, the intersection of one subterranean water course has necessitated the pumping from the tunnel of 800 gallons of water per minute to permit of keeping at work. In view of the vast construction work and the obstacles that were found, the greatest credit is due to Messrs. Rogers & Clement, the contractors. Your correspondent was lowered down the elevator shaft at the portal of the tunnel yesterday, and made the tour to its head and back. On entering the tunnel a few feet it has the same appearance as a mine. In the parts where men were working electric lights burned brightly, lighting up the interior. A peculiar acoustic property of the tunnel is that when near its center, more than half a mile from either end, one can hear the conversation of the workmen out at the terminus, the click of the masons' trowels

and the "dull thud" of the cement buckets as they dump their contents. The tram cars in the tunnel for conveying material to and from the three shafts to the surface, are run by mule power, the animals being stabled in the tunnel. Many fatal accidents have occurred, no less than some thirty fatalities having happened in the work. Some of these were due to the recklessness of the men, and others through unavoidable or unforeseen accident. In one instance a dinner-pail was suspended from an electric light wire. When its owner reached to take it down he received a shock which was fatal.

Electricity at Craig-y-nos Castle, Wales.

A series of entertainments recently took place in England at the home of the queen of song, Madame Patti-Nicolini. The hospitality of the lovely mistress of the fête prompted her to provide additional decorations and novel features of ornamentation to the scene that were unprecedented even in that luxurious castle.

Electricity, the master-spirit, played as usual a conspicuous part as an agency for adorning the theater, the winter garden and grounds. Mr. Gustave Trouvé, whose scientific attainments and inventions have been described in THE PHONOGRAM, was one of her favored guests, and, while famous dramatists and comediennes contributed their share to the general amusement and interest by taking part in the theatrical display presented, this gentleman's genius had converted the winter garden into an enchanted palace. He caused to be erected in its center a fountain, whose basin was fourteen feet in diameter, and which threw up water to a great height in the midst of groups of various figures, classical and artistic; in the middle of the circle of jets was a group of extremely brilliant electric lamps, which sent forth light colored in every shade of

the rainbow, produced by a water-wheel that operates upon a series of colored discs. The remarkable effect of this construction is difficult to describe. Suffice it to say that its iridescence converted the garden into a fairy-like scene.

During the play enacted there, a drop-curtain, painted to represent the Jardin Mabille of Paris, which is noted for its embellishment of thousands of Chinese lanterns, was rendered still more attractive by having an electric bulb introduced into each lantern. The letter to the editor of THE PHONOGRAM from Mr. Trouvé, describing his experiences as a guest, testifies to his enjoyment of the above diversion; the notice of the latter we take from the Welsh journal called *The Cambria*.

CRAIG-Y-NOS CASTLE,
YSRADGYNLAIS,
SWANSEA VALLEY,
SOUTH WALES.

THE PHONOGRAM, *World Building*, New York.

TO THE DIRECTOR:—I arrived in Paris this morning from England, where I received from Madame Patti-Nicolini a cordial and royal hospitality during fifteen days.

I hasten on my return to thank you for the biographical notice, so eulogistic, and the account of my modest inventions which you have published. Please accept my grateful recognition for this attention.

Whenever I conclude to give publicity to my inventions I shall recall with pleasure your excellent journal, so full of new and interesting facts, which has shown itself so complaisant and liberal towards me.

I forward to you an article from a journal which I brought over with me from Swansea, Wales, giving an account of the soiree at the chateau of the diva.

Be pleased to accept the assurance of my distinguished consideration.

G. TROUVE.

14 RUE VIVIENNE, PARIS.



A Typewriter Carriage Arrester.

A new typewriter carriage arrester is intended to obviate the inconvenience and loss of time experienced by operators on the typewriter in consequence of the necessity on all keyboard machines of operating the space-bar a number of times, or of lifting the dog free of the spacing rack by hand and guiding the paper to the given place whenever it is desired to bring the paper carriage to a particular point. Instant and perfect control of the movement of the carriage is secured.

The greatest speed ever recorded on the Caligraph was that made recently by Miss Sherman, of Providence, R. I., she having attained a rate of 126 words in one-half minute and an average of fifteen keys per second.

The absence of a shift key for capitals makes the Caligraph desirable.

It is more generally favored by press reporters than any other typewriter. This because of its durability, and ease of manipulation. The celluloid keys are also a great improvement.

We have received the following from Mr. Unz, vice-president and manager of the National Typewriter Co., of Philadelphia, under date of August 22d :

"It may be of interest to you to know that we have just been awarded a silver medal and diploma for the "National" typewriter by the Amsterdam (Holland) Exposition, which has just closed."

Verbatim reporting will undoubtedly be the branch of shorthand writing most seriously affected by the introduction of the phonograph. The claim which stenographers make that the phonograph cannot displace expert court reporters only goes to prove the ignorance of the real merits of the machine.

The new Bar-Lock will be out very soon. It has eight new characters, an interchangeable platen, and a wider ribbon. The length of ribbon is eighteen yards. The writing of the Bar-Lock is at all times visible without lifting the carriage. The ornamental cover which surrounds the keys is below the vision, so that a view of the printing point is unobstructed.

As heretofore stated, the phonograph will not take the place of a good amanuensis, but will undoubtedly be used as an adjunct to shorthand, in the same manner as the typewriter. The beneficial effect that this will have upon the salaries of good amanuenses will readily be appreciated.

PHONO CHAT.

The insurance men of Baltimore are quick to appreciate the value of the phonograph as a mechanical stenographer. One of the latest additions to the ranks of users in this class is the General Agent of the New York Life Insurance Co.

Mr. Russell, President of the Automatic Phonograph Exhibition Co., and Mr. F. G. Pask, General Manager, have had phonographs on the North German line of steamers during the past season, also on the Old Dominion and Savannah lines. The business has been excellent. The Bradbury-Stone battery has been used entirely, giving excellent results. Next year this company intends to place phonographs on all outgoing steamers. THE PHONOGRAM accompanies the instruments.

The lost phonograph has been found. The Pacific Phonograph Co. leased a phonograph to Rev. G. L. McNutt, of East Oakland. The minister went away recently, and the phonograph could not be found. The company offered a reward of \$10 for its recovery. The machine was traced to an express office, where it was being held because no one called for it. Rev. McNutt is therefore exonerated from any blame in the matter.

The Annual Industrial Exposition now being held in Pittsburgh, Pa., is well attended and the exhibits are numerous and beautifully displayed. Among those attracting most attention is that of the Western Pennsylvania Phonograph Co. A large number of commercial and musical phonographs are tastefully arranged around the room on tables and cabinets, and are attended by expert operators whose function it is to dictate into the machines and receive dictation, thus giving evidence of their practical utility. The Densmore typewriter stands conspicuously nearby, taking down all the phonograph says with accuracy.

Mr. G. B. Motheral, president of the Western Pennsylvania Co., is also the general agent for the Densmore, which has taken front rank in his territory.

The coin-in-the-slot phonograph is an old friend, and none can pass it by without listening

to some clever recitation by a famous author, or some melodious strain from one of the latest operas.

A large number of PHONOGRAMS are being distributed among the visitors, who welcome gladly any news in regard to this popular instrument.

The Western Pennsylvania Phonograph Company has left its old quarters on account of the property changing hands. The new owner intends to erect a twelve-story business block on the site. The company is now located at 214-215 Ferguson Block, one of the best office buildings in Pittsburgh. A new dynamo is to be placed in the building, and this company will have the advantage of getting current free of charge. Any person using a phonograph in the building has likewise the same privilege.

Personal.

Mr. T. R. Lombard, Vice-President of the North American Phonograph Co., has just returned from a most satisfactory trip through the West, having visited all the phonograph companies. Mr. Lombard is looking well and expressed himself as delighted with his visit, and says the phonograph business is prospering.

Mr. R. F. Cromelin, Secretary of the Columbia Phonograph Co., spent a part of his vacation in a trip by sea from Baltimore to Boston and return. While in Boston he visited the office of the New England Phonograph Co.

Mr. E. D. Easton, President of the Columbia Phonograph Co., returned to Washington with his family from their Summer home, Arcola, Bergen Co., N. J., on September 10th.

Mr. V. H. Emerson, the manager of the New Jersey Phonograph Co., expects to spend a week in Washington and Baltimore this Fall to observe the commercial use of the phonograph in those cities, with a view of active work in the same direction in New Jersey.

Mr. E. E. Lewis had charge of the phonograph at all the Pennsylvania Fairs this season, and has reaped a golden harvest.

Authors and Publishers.

Our advertising columns this month announce the publication of a work which will be hailed with delight by all users of the phonograph, and which occupies a hitherto untrodden field—"A Practical Guide to the Use of the Edison Phonograph, by James L. Andem, President and General Manager of the Ohio Phonograph Co." This is the first time that any publication containing practical directions for using the phonograph has been offered to the public. Everyone has felt the necessity for such a manual, and inquiries have been constantly made for the very information which Mr. Andem has put into his little volume with such fulness of detail as to cover every possible point which can arise in using the instrument. The work could not have fallen into more competent hands, as the author is an acknowledged authority on all matters pertaining to this subject; and, as the table of contents published in the advertisement shows, he has given to the public in this work the results of his extensive experience gained in personally using, and also in introducing the machine to the public.

In our opinion the lack of just such information as is contained in this volume has prevented, to some extent, the successful use in all cases of the machine in the hands of inexperienced users, and we believe that if a copy of this manual should be given to each renter or purchaser of a machine by the local company placing it, the officers of the company would be saved many a question and much time which would otherwise be spent in giving verbal instructions to the beginner upon the many points which constantly arise until the operator has familiarized himself with its use.

Directions are given which will enable anyone to operate the phonograph successfully, even without personal instruction, so that a machine can be sent to a distant point, and the expense of sending an "expert" rendered entirely unnecessary, by forwarding with it a copy of this manual.

The work is not confined to any particular branch of the subject, but covers the use of the machine commercially, socially and in the exhibition field, giving to each portion the practical suggestions which experience has developed as necessary.

It has been very tastefully printed and bound, and the numbered references and illustrations of different parts of the machine explain its con-

struction so fully that there can be no doubt regarding the particular use and function of each portion of the machine.

We predict a large sale for this timely volume and recommend it to our readers as a standard authority and guide for all users of the phonograph who may meet with any difficulties in the care and operation of their machines, and are sure that the information they will obtain by perusing it will give them a rich return for the small expenditure involved in obtaining it.

The *Cosmopolitan* for September presents the views of its able editor, Mr. John Brisben Walker upon the question of "Strikes and Strikers," and really throws some new light upon the subject. It is time that the efforts of the best minds in the country should have an opportunity to envisage a matter which, disregarded, may produce evils difficult to check or repair. We suppose a board of arbitration will be appointed, as in the case of national disputes, to settle this knotty affair.

It is pleasant to follow up the generous and loyal estimate of the co-editor of this magazine, Mr. Howells, as he paints a beautiful life on its pages. We hail each new departure into fields of thought so much more worthy his polished pen than the old-time themes, which, however cleverly treated, seemed too insignificant to occupy a representative American author.

Reading Notices.

The toy dynamo mentioned in article written by G. H. Guy, appearing on page of this issue, is manufactured by the Eastern Electric Light and Storage Battery Co., of Lowell, Mass. Phonograph users consider both dynamo and battery of this company *par excellence*.

Jno. Underwood & Co. (the dealers in type-writing supplies), 30 Vesey street, sell type-writing paper at mill prices. Send for their samples and see.

Geo. A. Hill, 10 Barclay street, dealer in typewriters, has enlarged his quarters. Why? Increase of business. Why? Giving good values.

TORONTO, Aug. 22, 1892.

V. H. McRAE, Pulitzer Building, New York:

The "Commercial" machines that we have placed here have been very successful, and the verdict so far is, "as indispensable as the typewriter."

HORTON, MACFARLANE & Co.

TEN REASONS WHY

EDISON'S PHONOGRAPH

IS SUPERIOR TO ANY STENOGRAPHER.

1. SPEED.

You can dictate as rapidly as you please, and are never asked to repeat.

2. CONVENIENCE.

You dictate alone, at any hour of day or night that suits your convenience.

3. SAVING OF OPERATOR'S TIME.

During dictation operator can be employed with other work. Operators make twice the speed in writing out that is possible from shorthand notes.

4. ACCURACY.

The phonograph can only repeat what has been said to it.

5. INDEPENDENCE.

You are independent of your operator. It is easy to replace a typewriter operator, but a competent stenographer is hard to find.

6. ECONOMY.

The cost of an outfit added to salary of operator is less than that of a stenographer, and results obtained far superior.

7. SIMPLICITY.

The method is so simple that no time need be lost in learning it. You can commence work AT ONCE.

8. TIRELESSNESS.

The phonograph needs no vacation. Does not grumble at any amount of over-work.

9. PROGRESSIVENESS.

The most progressive business houses are now using phonographs, and indorse them enthusiastically. Do you want to be up with the times? If so,

10. FREE TRIAL.

You can have phonographs sent you on trial, and return them if they fail to do what is claimed.

"IMPROVEMENT IS THE ORDER OF THE DAY."



The New Special No. 3 Caligraph has met with universal favor because it has two interchangeable platens, which can be adjusted in less than thirty seconds, enabling an operator to produce the work of two machines from one; because it has a positive ribbon movement, which presents a fresh surface of the ribbon for each type impression; because it has a wheel dog stay and six additional characters; because it has a hollow type bar, which gives lightness and strength; because it has an adjustable type hanger, which gives permanent alignment; because it has a key for every character and an adjustable feed guide. In fact, the Special No. 3 Caligraph is the acme of perfection in typewriters.

SEND FOR ILLUSTRATED CATALOGUE TO

THE AMERICAN WRITING MACHINE COMPANY,

237 BROADWAY, NEW YORK,

Branch Offices: { 1003 Arch Street, Philadelphia }
 { 14 W. Fourth Street, Cincinnati. }

Branch Factory, Coventry, England.
 Mention THE PHONOGRAM.

Correspondence, briefs, specifications or literary composition may be recorded on the phonograph, to be transcribed later by any one who can operate a typewriter. In this field it is steadily making its way. Business machine, with Storage Battery, etc., sold or leased. Prices given on application to

THE TEXAS PHONOGRAPH CO.,

THOS. CONYNGTON, Genl. Man.

GALVESTON, TEXAS.

THE PHONOGRAPHIC MAGAZINE,

Jerome B. Howard, Editor.

The authentic organ of the Benn Pitman System of Phonography.

40 Pages, Monthly. \$1.50 a Year.

ADDRESS

THE PHONOGRAPHIC INSTITUTE,
 Cincinnati, O.

TYPEWRITERS.

Largest like establishment in the world. First-class Second-hand Instruments at half new prices. Unprejudiced advice given on all makes. Machines sold on monthly payments. Any instrument manufactured shipped, privilege to examine. EXCHANGING A SPECIALTY. Wholesale prices to dealers. Illustrated Catalogues Free.

TYPEWRITER HEADQUARTERS, { 31 Broadway, New York.
 { 186 Monroe St., Chicago.

=====PRICE LIST AND SIZES=====

—OF—

P H O T O G R A P H S

—OF—

Mr. Thomas A. Edison,

LABORATORY, ETC., ETC.

Pictures, 11x14 on 14x17 cards, price \$2.00 each,
or \$22.00 per dozen.

- No. 1. Laboratory exterior—winter scene.
 “ 2. “ Galvanometer or Electrical Dept.
 “ 3. “ Phonograph, Experimental “
 “ 4. “ Chemical Dept.
 “ 5. Mr. Edison at work in Chemical Dept.
 “ 6. Laboratory main machine shop.
 “ 7. “ exter. (summer) corner rear view.
 “ 8. “ Library, with statue “Genius of Light.”
 “ 9. “Glenmont,” exter., showing Conservatory and “Den.”
 “ 10. “Glenmont,” Parlor.
 “ 11. “ “Den,” showing ceiling painting, upright view.
 “ 12. “Glenmont,” “Den,” horizontal view.
 “ 13. “ exter., showing Conservatory and porch.
 “ 14. Edison sitting at Laboratory table, taken 1892.
 “ 15. Edison portrait, oval, with signature, 1889.
 “ 17. Statue in Library, “Genius of Light.”
 “ 18. Laboratory Dynamo Dept.
 “ 19. “ exter., main building.
 “ 20. The Edison Phonograph, latest type.
 “ 21. Laboratory, Precision Dept., upper shop.
 “ 22. “ exter., summer, same view as No. 1.
 “ 23. Edison's portrait at 14.
 “ 24. “ mother.
 “ 25. “ portrait at 4.
 “ 26. Allegorical painting—Birth of the Edison Incandescent Lamp, Menlo Park, 1875.
 “ 27. Edison's Birthplace.

Pictures, 8x10 on 10x12 cards, price \$1.25,
and \$14.00 per dozen.

- No. 40. “Grand Trunk Herald,” printed and published by T. A. Edison on board train Chicago & Grand Trunk R.R., at 14, front view.
 “ 41. “Grand Trunk Herald,” printed and published by T. A. Edison on board train Chicago & Grand Trunk R.R., at 14, back view.
 “ 42. Edison's Birthplace.
 “ 43. “ Profile, $\frac{3}{4}$ figure.

No. 44. Edison's bust, oval, with autograph, 1889

“ 45. “ bust, “ “ “ 1892

“ 46. Edison, $\frac{3}{4}$ length, 1889.

“ 47. Llewellyn Park Entrance.

“ 48. Edison at 14.

“ 49. “ listening to Phonograph.

“ 50. Edison's Mother.

“ 51. “ First Patent, Vote Recorder, Patent sheet.

“ 52. Edison's Newark Ward St. Factory, Edison in group, 1876.

“ 53. Edison at 4.

“ 54. Allegorical Painting.—Birth of the Edison Incandescent Lamp—Menlo Park, 1878.

“ 55. Edison driving his first Electric Locomotive, 1879.

Pictures, 5 x 8 on 8 x 10 cards, price \$1.00,
or \$11.00 per dozen.

No. 60. Edison's Birthplace.

“ 61. Edison, $\frac{3}{4}$ size, 1889.

“ 62. “ bust, oval, autograph attached, 1892.

“ 63. Edison's bust, oval, autograph attached, 1889.

“ 64. Laboratory, a corner of Library.

“ 65. “Glenmont,” exter. view, from road fence.

“ 66. The Edison Phonograph—latest type.

“ 67. Precision Dept., upper shop, (laboratory.)

“ 68. Laboratory Library, with Ferns.

“ 69. Edison Phonograph Works.

“ 70. Edison's Mother.

“ 71. “ “ reduced size.

“ 72. Edison at 14.

“ 73. “ “ 4.

MISCELLANEOUS

No. 100. Micro-photo., Flx's head, $6\frac{1}{2} \times 8\frac{1}{2}$, \$1.35.

“ 101. “ Bamboo Filaments, showing Fibro-Vascular bundles, used in Edison Lamps, $6\frac{1}{2} \times 8\frac{1}{2}$, \$1.35.

“ 102. Micro-photo., Bamboo Filaments, showing Fibro-Vascular bundles, used in Edison Lamps, greater magnification, $6\frac{1}{2} \times 8\frac{1}{2}$, \$1.35.

“ 150. Llewellyn Park Entrance, 10x12, \$1.50.

“ 16. Edison Listening to Phonograph, $6\frac{1}{2} \times 8\frac{1}{2}$, \$1.35.

Please order by number, giving size.

The North American Phonograph Co.,

OWNERS OF THE PATENTS OF THOMAS A. EDISON,

— FOR —


Recording, Perpetuating and Reproducing Articulate Speech and other Sounds.

Principal Offices: 44 BROAD STREET, NEW YORK.

LIST OF AGENTS

(Each exclusive for the Territory named).

NAME.	ADDRESS.	TERRITORY.
Alabama Phonograph Co.,	Anniston, Ala.,	Alabama.
Conyngton, Sellers & Con- yngton,	Jackson, Miss.,	The State of Mississippi.
Columbia Phonograph Co.,	Washington, D. C.	Delaware, Maryland, and Dist. of Columbia.
Colorado and Utah " "	Denver, Col.,	Colorado.
Chicago Cen'l " "	Chicago, Ill.,	Cook County, Illinois.
Eastern Penn'a " "	Philadelphia, Penn.,	Eastern part of State of Pennsylvania.
Florida " "	Jacksonville, Fla.,	Florida.
Georgia " "	Atlanta, Ga.,	Georgia.
George W. Grant,	246 5th St., L'sville, Ky.	Tennessee.
Holland Bros.,	Ottawa, Ont.,	Canada.
Iowa Phonograph Co.,	Sioux City, Iowa,	Iowa.
Kansas " "	Topeka, Kan.,	Kansas and New Mexico.
Kentucky " "	Louisville, Ky.	Kentucky.
Leeds & Co.,	Indianapolis, Ind.,	Indiana.
Louisiana Phonograph Co.,	New Orleans, La.,	Louisiana.
Michigan " "	Detroit, Mich.,	Michigan.
Missouri " "	St. Louis, Mo.,	Missouri, Arkansas and Indian Territory.
Minnesota " "	Minneapolis, Minn.,	Minnesota.
Montana " "	Helena, Mont.,	Montana.
New England " "	Boston, Mass.,	New England States.
New York " "	New York, N. Y.,	New York State.
Nebraska " "	Omaha, Neb.,	Eastern part of State of Nebraska.
New Jersey " "	Newark, N. J.,	New Jersey.
Ohio " "	Cincinnati, Ohio,	Ohio.
Old Dominion " "	Roanoke, Va.,	Virginia, North and South Carolina.
Pacific " "	San Francisco, Cal.,	Arizona, California and Nevada.
Spokane " "	Spokane Falls, Wash.,	{ Oregon, East 44° long.; Washington, 44° long., and Idaho.
South Dakota " "	Sioux Falls, So. Dak.,	South Dakota.
State Phono. Co., of Illinois,	Chicago, Ill.,	State of Illinois, exclusive of Cook County.
Texas Phonograph Co.,	Galveston, Texas,	Texas.
West Penn. " "	Pittsburgh, Penn.,	West. part of State of Pa. and West Virginia.
Wisconsin " "	Milwaukee, Wis.,	Wisconsin.
West Coast " "	Portland, Ore.,	{ Oregon, West 44° long.; Washington, West 44° long.
Wyoming " "	Cheyenne, Wy. Ter.,	Wyoming.

 We deal with the public only through our Agents. Please note list carefully before entering orders, and order from the Agent for State in which you reside or wish to use the machines.

Owing to the many inquiries received by us daily as to where Phonographs can be purchased, we beg to present below a list of our authorized agents, each exclusive for the district named, who offer

Phonographs ^{AND} Supplies FOR SALE.

<i>Agent's Name and Address.</i>	<i>Territory.</i>
NEW ENGLAND PHONOGRAPH CO., 657 WASHINGTON ST., BOSTON, MASS.	NEW ENGLAND STATES.
WISCONSIN PHONOGRAPH CO., 414 BROADWAY, MILWAUKEE, WIS.	WISCONSIN.
PACIFIC PHONOGRAPH CO., 323 PINE ST., SAN FRANCISCO, CAL.	CALIFORNIA, ARIZONA, NEVADA.
OHIO PHONOGRAPH CO., 220 WALNUT ST., CINCINNATI, O.	OHIO.
COLUMBIA PHONOGRAPH CO., 627 E ST., N. W., WASHINGTON, D. C.	MARYLAND, DELAWARE, AND DIST. COLUMBIA.
MONTANA PHONOGRAPH CO., GRANDON BLOCK, HELENA, MONT.	MONTANA.
KENTUCKY PHONOGRAPH CO., 256 FIFTH ST., LOUISVILLE, KY.	KENTUCKY.
GEORGE W. GRANT, STATE AGENT, P. O. BOX 16, NASHVILLE, TENN.	TENNESSEE.
LOUISIANA PHONOGRAPH CO., 27 EQUITABLE BUILDING, NEW ORLEANS, LA.	LOUISIANA.
MISSISSIPPI STATE PHONOGRAPH AGENCY, 27 EQUITABLE BUILDING, NEW ORLEANS, LA.	MISSISSIPPI.
LEEDS & COMPANY, STATE AGENTS, IND.	INDIANA.
WESTERN PA. PHONOGRAPH CO., 146 FIFTH AVE., PITTSBURGH, PA.	WEST VA. AND WEST- ERN PART OF PENNA.
MISSOURI PHONOGRAPH CO., TELEPHONE BLDG., ST. LOUIS, MO.	MISSOURI, ARK. AND INDIAN TERRITORY.
HOLLAND BROTHERS, OTTAWA, ONTARIO, CANADA.	CANADA AND ALASKA.

For terms, conditions of sale, or Illustrated Catalogue of the machines and supplies, send stamp with inquiry to the company or agent in whose territory you contemplate using the machine, or to

The North American Phonograph Company,
44 BROAD STREET, NEW YORK CITY.

Scientists and Experts say: "Deafness can be Cured by the Phonograph."

Secure a set of prepared cylinders and you will not long be in doubt as to their efficiency. Made with the finest of steel tools in a machine especially constructed for the purpose. Every cylinder cut with absolute accuracy, consequently the best results are obtained.

Inventor of the only process for making brass or other metal records using the Phonograph as it is not constructed and without change in any way.

C. FRANCIS JENKINS,

900 K St., N. W., Washington, D. C.

Manufacturer of the finest phonograph bells for warning the dictator of the approach to the end of the cylinder. They are literally "out of sight."

GEORGE A. HILL, MANAGER.

THE TYPEWRITER EXCHANGE,
CALIGRAPH
BUY, SELL, EXCHANGE & RENT
REMINGTON, HAMMOND & OTHER
TYPEWRITING MACHINES.
SUPPLIES OF STANDARD QUALITY. **10 Barclay Street,**
NEW YORK.



**REGULATE THE
STOMACH, LIVER AND BOWELS,
AND
PURIFY THE BLOOD.**

A RELIABLE REMEDY FOR

Indigestion, Biliousness, Headache, Constipation, Dyspepsia, Chronic Liver Troubles, Dizziness, Bad Complexion, Dysentery, Offensive Breath, and all disorders of the Stomach, Liver and Bowels.

Ripans Tablets contain nothing injurious to the most delicate constitution. Pleasant to take, safe, effectual. Give immediate relief.

Sold by druggists. A trial bottle sent by mail on receipt of 15 cents. Address

THE RIPANS CHEMICAL CO.
10 SPRUCE STREET, NEW YORK CITY.

RESTORE YOUR EYESIGHT

Cataracts, scars or films can be absorbed and paralyzed nerves restored, without the knife or risk. Diseased eyes or lids can be cured by our home treatment. "We prove it." Hundreds convinced. Our illustrated pamphlet, "Home Treatment for Eyes," free. Don't miss it. Everybody wants it. "THE EYE," Glens Falls, N.Y.

PHOTOGRAPHS

from the original plates, of the World's greatest inventor,

THOMAS A. EDISON,

taken at different periods of his life, with autograph attached. **His Birthplace, Interior and Exterior Views of "Glenmont,"** his present beautiful home in Llewellyn Park, N. J., and surroundings; of his great **Laboratory**, at Orange, N. J., with its wondrous inventions, the **Phonograph**, etc., etc., which cannot be obtained elsewhere.

These photographs are Copyrighted, limited in number and will be sold to the first applicants at the following prices:

Library, Electrical Dept., Chemical Dept., Shops, (interior at Laboratory), Outside views of Laboratory, The Edison "Den," or Study, Residence of Edison, Birthplace of Edison, Edison at work in Chemical Department, Entrance to Llewellyn Park, "Glenmont," Residence of Edison, Edison listening to the Phonograph, Edison at 14, Grand Trunk Herald, printed by Edison at 14.

11 x 14 on 14 x 17 Cards,	-	\$2.00
7 x 9 on 8 x 10 gilt edge, or 10 x 12 plain,	-	1.50
10 x 12 bust, Mr. Edison,	-	1.50
8 x 10 " " "	-	
with Autograph,	-	1.25
5 x 7 bust, Mr. Edison,	-	1.00
Cabinets,	-	.75

NOTE IN LETTER.

Orders promptly filled by V. H. McRAE, Manager, "PHONOGRAM,"
Room 87, World Building, New York.

(CALL AND SEE.)

UNDERWOOD'S
SUPERIOR
TYPEWRITER SUPPLIES,

Typewriter Ribbons.

Hammond Ribbons.

Smith Premier Ribbons.

Caligraph Ribbons.

Carbon Papers.

Pads for Yost Typewriter.

PADS AND RIBBONS IN ALL COLORS.

FOR ALL STYLES OF WRITING MACHINES.

Supplies for All Kinds of Machines.

JOHN UNDERWOOD & CO.,

*163 La Salle St., Chicago, Ill.
10 Johnston St., Toronto, Ont.*

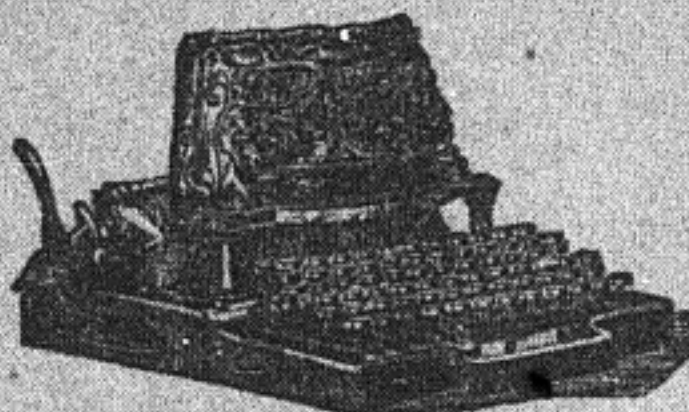
30 VESEY ST., NEW YORK

SEND FOR PRICE-LIST.

The BAR-LOGK TYPEWRITER,
The Modern Writing Machine.

THE IDEAL

MACHINE FOR USE



WITH THE

PHONOGRAPH

COMBINES THE FOLLOWING LABOR-SAVING FEATURES FOUND IN NO
OTHER WRITING MACHINES:

*Writing Always in Plain Sight,
Automatic Line Spacing,*

*Powerful Manifolders,
Light Running,*

*Automatic Ribbon Feed Reverse,
Permanent Alignment,*

*Unlimited Speed,
Durable.*

THE No. 2 MACHINE TAKES PAPER 9 IN. WIDE, AND WRITES A LINE 8 IN. LONG.

Price, \$100 Complete.

THE No. 3 MACHINE TAKES PAPER 14 IN. WIDE, AND WRITES A LINE 13 IN. LONG.

Price, \$110 Complete.

SEND FOR A CATALOGUE.

The Columbia Typewriter Manufacturing Co.,
379 BROADWAY, NEW YORK.